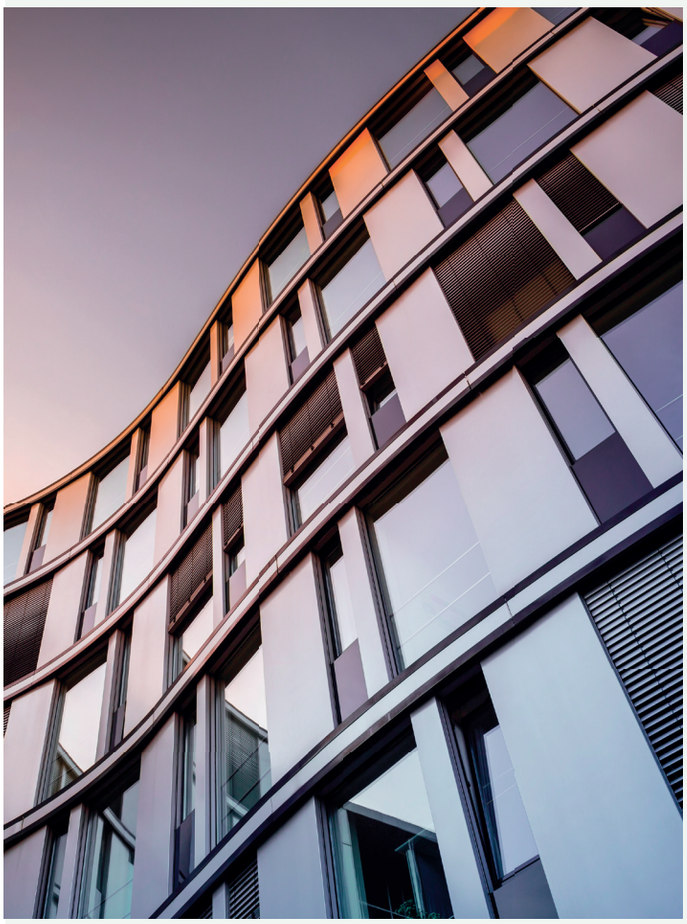
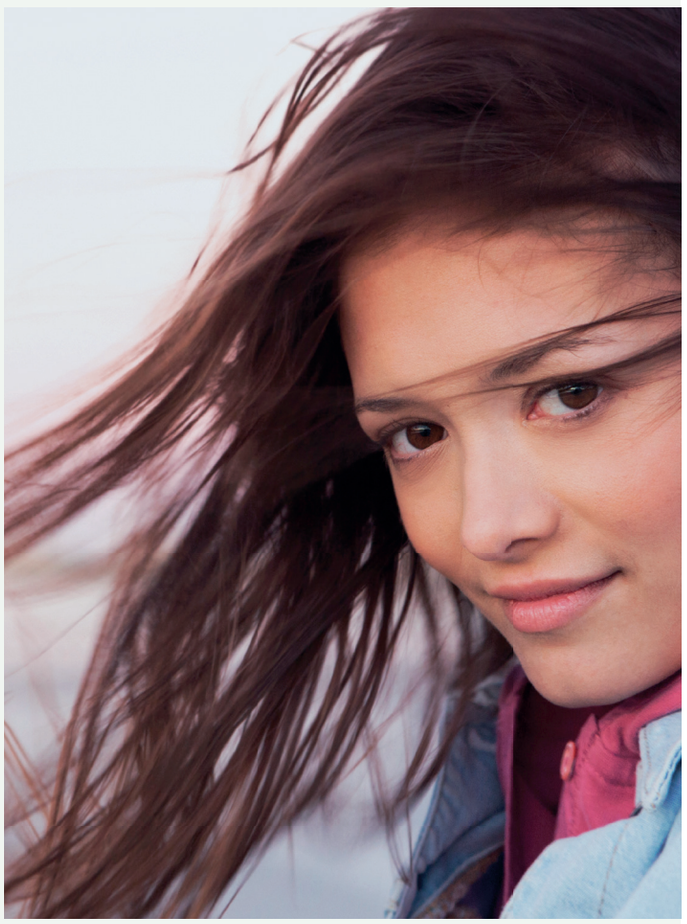
YORK®

INSTALL CONFIDENCE





YORK® Airside Products Catalogue 2016

Johnson Controls

When it comes to comfort cooling or air conditioning, Johnson Controls meets all your product needs.

Whether it be air handling units, fan coil units or close control air conditioning, we have been providing energy efficient air handling units to the HVAC industry for over 50 years. During this time, focus on quality customer service as well as quality products have always come first.

We specify the right air handling unit (AHU) or fan coil units (FCU) working directly with you. We then manufacture and deliver the solution for your project, taking into consideration acoustics, energy, controls, indoor air quality and budget. A tailored product for specific needs.

You can depend on us

When it comes to AHU's, FCU's, and other airside products the reputation and experience of the manufacturer is as important as the product. Our YORK® by Johnson Controls products have a well earned reputation for quality, for the benefit of those specifying, installing and servicing HVAC equipment.

We don't rest on our merits though. We are constantly improving our products. We analyse every aspect of our products to make them more energy efficient, whilst maintaining reliability and ease of installation and use.

We offer expert knowledge and practical solutions in a proactive and friendly way, and we always deliver on our promises.

Johnson Controls has become a lead technology and energy-efficiency partner for the Clinton Climate Initiative that aims to reduce greenhouse gases in 40 major cities worldwide.

Johnson Controls

Catalogue contents

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Close Control Units

Factory Packaged Control Solutions

Air Handling Systems & Terminal Devices

AIR HANDLING UNITS

FAN COIL UNITS

CLOSE CONTROL UNITS

SMARTPAC – FACTORY PACKAGED CONTROLS

Johnson Controls

So why choose YORK® Air Handling Units?

We recognise that your reputation depends on the quality of the products you choose and how well they are installed. That's why we work hard to make selecting, installing and operating our products as easy as possible. Our comprehensive range includes a number of additional options that make YORK® Air Handling Units the professional's choice.

Additionally, our Air Handling Units comply with requirements of EU Commission Regulation No. 1253/2014 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for ventilation units.

Factory Packaged controls

Save money and time avoiding to mount controls on-site. Johnson Controls offers YORK® Air Handling Units complete with Metasys® factory packaged controls so it is ready connect to the site network when it arrives.

Our Factory Packaged controls undergo a detailed testing process at the factory to ensure that all wiring is installed correctly, and that all control panels and end devices work appropriately before the AHU is shipped.

Factory Packaged Controls option

- AHUs Metasys® factory packaged controls specified option available.
- Panel Power wiring, Controls wiring and the Variable Speed Drive are included. The pre-engineered controller and required peripheral devices are all supplied factory fitted and tested.
- Guaranteed compliance with European installation regulations.
- Simplified final commissioning through the units' keypad and display.

METASYS®

LonMark® Interoperability Association

ASHRAE BACnet™

Energy recovery options

The exhaust air stream from an AHU represents another opportunity to save energy. A **heat recovery 'thermal' wheel** can economically transfer heat and moisture between the exhaust-air and outside-air paths, reducing the cost of conditioning the supply air.

For the simplest form of heat recovery, you can take advantage of **"free" cooling** with mixing box sections. During spring and autumn operation, cool/dry outside air cools and dehumidifies the facility, reducing the need for mechanical cooling.

Alternatively, you can use **recuperative plate heat exchangers**. These also allow free cooling in summer by use of face and bypass dampers which by-pass the air around the exchanger so that it is not warmed by the extracted air.

We can also offer **refrigerant heat pipe** and **heat recovery coils** on your AHU to maximise energy savings. All heat recovery devices installed are compliant with latest ErP regulations.

Heat-recovery wheels reduce the cost of conditioning supply air.

Reduce fan operating costs

In an AHU, the fan is traditionally the largest source of energy consumption. We can help reduce this by offering a range of **energy-saving options**.

- High- or premium-efficiency motors can be specified.
- Direct-drive plenum fans eliminate belt-and-pulley energy losses.
- If the air system is designed for variable-air volume (VAV), YORK® AHUs fitted with variable speed drives offer the most efficient method of VAV fan control.
- Factory-mounting a variable speed drive reduce jobsite labour costs, unit energy consumption and unit Life Cycle Costs.

Introducing the YMA range of Air Handling Units

The YORK® YMA range encompasses our extensive knowledge of air-handling, offering a highly reliable, economical and energy efficient product capable of addressing all of your needs.

Features

The YMA family of air handling units consists of a range of models having air volumes ranging from 0.25 m^3/s to 50 m^3/s and total static pressures as high as 2000 Pascal: to ensure maximum flexibility and the best solution for your application, units are available in increments of 40mm in height and 50mm in width.

YMA Air Handling Units can be manufactured in varied configurations, with a wide selection of components, to meet customer requirements. Units are also available in line with the requirements of hospital sector specifications.

Dimensional flexibility. Space constraints are a reality on most construction projects. YORK® AHU's design is based on variable aspect ratios, so the unit can be specified to fit the application and space.

Material flexibility. Different environments require different materials so we offer a number of construction materials, including galvanized steel, pre-coated steel, stainless steel, and aluminium.

Component flexibility. To meet any AHU requirement, our units offer every available air-handling component. And as applicable technology creates new capabilities, Johnson Controls will apply this to our product range.

Over the past 50 years we have supplied air handling units for:

- **Commercial space:** office buildings, cinemas, concert halls
- **Institutional space**: schools, universities, churches
- **Industrial manufacturing:** automotive, aerospace, chemical, petrochemical
- **Hygienic systems:** hospitals, life sciences, R&D facilities, food processing, clean rooms
- **Process manufacturing:** pharmaceutical, electronics, semiconductor

YMA
Custom Air Handling Units

A complete range from 0.25 m^3/s to 50 m^3/s

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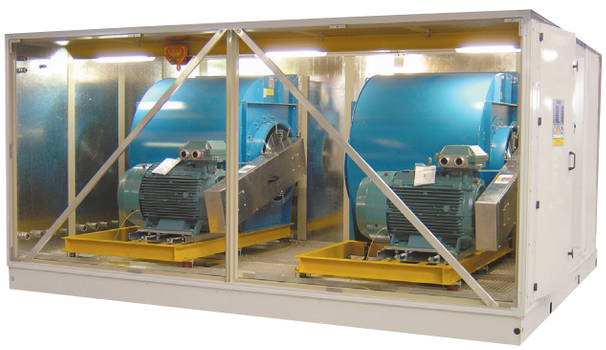
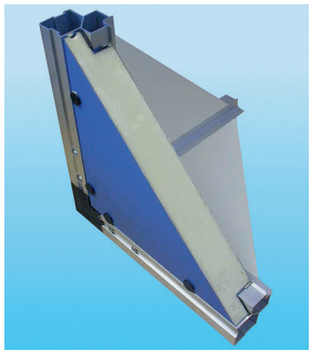


Units may include combinations of any of the following:

- Single or double decked units.
- Indoor or outdoor applications - Outdoor units are available with a flat or sloping roof, louvres, rainhoods, birdscreens and special finishes.
- Site assembled units.
  Where space constraints restrict the size of a single item modules can easily be aligned and locked together by gaskets and stainless steel bolts inserted into factory predrilled assembly holes.
- Air mixing boxes and various filter options.
- Gas fired burners.
- Cooling and heating coils.
- Humidifiers
- Heat recovery systems.
- UV sterilising lamps.
- Dessicant and thermal wheels.
- Sound attenuation.
- ATEX Certification.
- Factory fitted controls and sensors with YORK SmartPAC Factory Packaged Controls.
  These include all necessary piping, wiring, controls and refrigeration equipment to provide a complete central air conditioning plant.

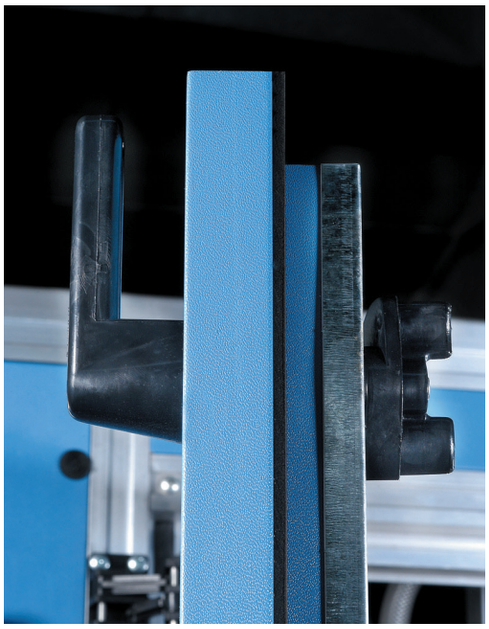
The Frame

- Low weight, corrosion resistant, marine aluminium alloy twin box section profile, designed to provide strenght and stability
- Gaskets between the frameworks' panels and profiles, to allow efficient cleaning and prevent trapping and harmful bacteria growth
- Optional thermal bridge free profile
- Unit sections mounted on a 3mm thick galvanized steel bolted base frame



Standard Construction

Cold Bridge Free Construction



Panels

- Standard 60mm thick (40mm optional) double skinned galvanized panels
- 0.7mm internal and external skins with 40kg/m³ density pressure injected polymerised polyurethane foam insulation
- Returned "K" value of 0.2W/m C
- Optional panels manufacturing from pre-plastic coated steel, pre-painted metal or stainless steel
- Mineral wool infill panel of 100kg/m3 density available
- 88mm panels available upon request

Access

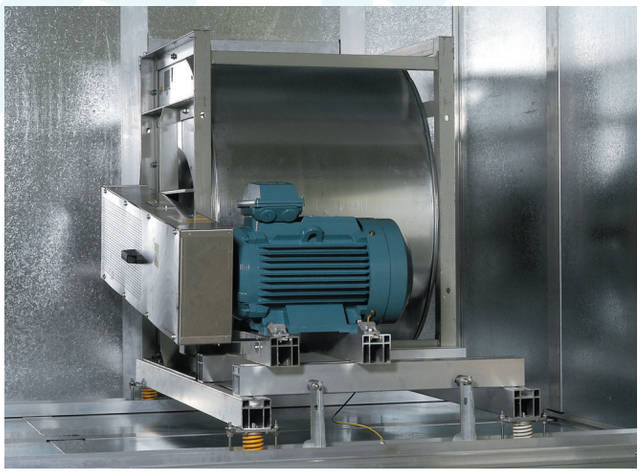
- Fully removable panels
- Access doors equipped with half turn nylon handles and cam locks
- Fibreglass reinforced plastic hinges with stainless steel pivots
- Double glazed viewing portholes (optional)

Mechanical characteristics- prEN 1886:2007*

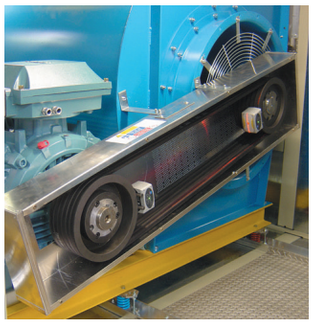
***EUROVENT DIPLOMA 05.02.314 APPLIES**

MODEL	CASING STRENGTH CLASS	CASING AIR LEAKAGE CLASS AT 400 Pa	CASING AIR LEAKAGE CLASS AT 700 Pa	FILTER BYPASS LEAKAGE CLASS	THERMAL TRANSMITTANCE CLASS	THERMAL BRIDIGING FACTOR CLASS
PU6055ST	D1(M)	L1(M)	L1(M)	F9(M)	T2	TB3
PI6055TB	D1(M)	L1(M)	L2(M)	F9(M)	T2	TB2
PU6040TB	D1(M)	L1(M)	L1(M)	F9(M)	T1	TB2
RW6055ST	D2(M)	L2(M)	L2(M)	F9(M)	T2	TB3
RW6055TB	D1(M)	L1(M)	L2(M)	F9(M)	T2	TB2
PU6055TB	D1(M)	L1(M)	L1(M)	F9(M)	T1	TB2

Fans (*)



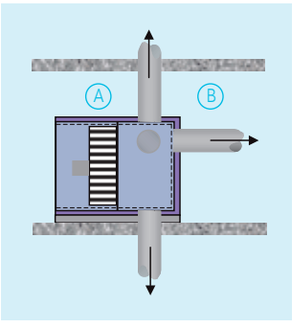
- One or two double inlet, double width forward or backward curved centrifugal fans
- Aerodynamic inlets design, with static and dynamic balancing of the wheels according to airflow and speed
- Sealed for life bearings for smaller fans , whereas larger versions have block type self aligning ball journals and split blocks with grease points
- Removable fan guards dedicated to vee belt fan drives
- Motors protection is ensured by an enclosed fan cooled type class F insulation to IP55 (Category 2 Zone 1 ATEX certified motors available as an option)
- Total fan assembly installed on a separate frame isolated from the unit structure by spring anti-vibration mounts
- Plenum type fans available for applications where plant space is a premium. The plenum fan pressurises an acoustically lined fan chamber and circular or rectangular discharge duct connections can be located on the external faces of the chamber. This reduces the length of the air handling plant by eliminating the need for external attenuators or complicated duct transformation pieces.



Drive Options

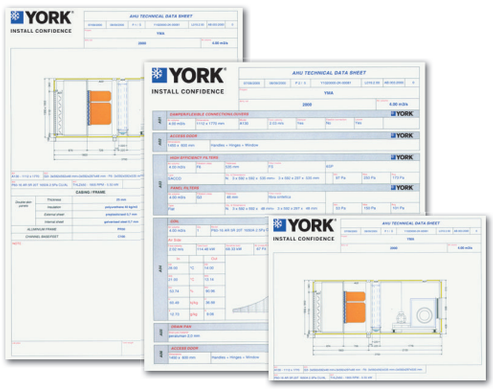
Dual speed fan motors
Direct drive fans
Variable speed drives

Plenum Fan Configuration



Ⓐ Acoustically Lined Fan Section
Ⓑ Supply Air Ducts

(*) Please contact local sales office for fan application details.



Computer Selection Programme

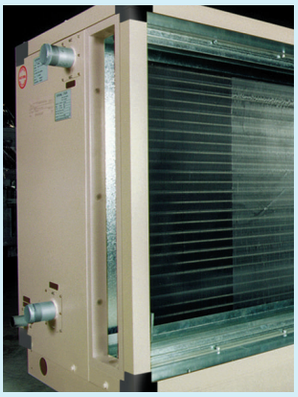
The flexible computerised programme provides the optimum equipment selection to satisfy the specified conditions and provides full technical information plus General Arrangement drawings.

Cooling and Heating Coils

Cooling and heating coils are computer selected to achieve the optimum thermal and psychrometric efficiency with low air and water pressure drops.

Coils

- Mechanically bonded to aluminium fins copper tubes standard coils, with threaded steel headers, all contained in a galavanised steel frame
- Air vents and drain connections provided
- Coils leak tested at 30 bar and maximum 15 bar design pressure
- Cooling coil assembly located in a drain pan within the coil section on slide rails for easy withdrawal from either side
- "Dry pan", 3 directions inclined design insulated condensate pans, to ensure complete condensate removal, and manufactured from a choice of stainless steel or aluminium alloy
- Drop eliminators fitted after cooling coils, when velocity exceeds 2.5m/s



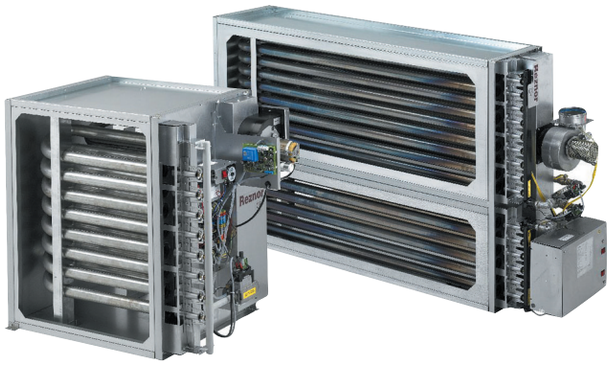
Coil options

- Medium/high pressure steam coils
- Copper fins
- Electro-tinned copper fins
- Pre-painted and epoxy coated fins
- Copper headers
- All steel coils
- All aluminium coils
- Direct expansion coils
- Stainless steel slide rails
- Stainless steel frame
- Aluminium and PPTM droplet eliminators
- Fully removable drain pan

Electric Heating Coils

- Manufactured from low temperature screened stainless steel tube
- Spiral fin heating elements secured to a heavy gauge steel frame
- Fitted manual reset safety thermostat, high temperature cutout and airflow switch

- Step or modulating controls options available



Gas Burners

- Indirect gas fired burners with an optional choice of on/off, staged, or fully modulating control, and are suitable for use in both draw through and blow through applications
- Burner design ensures no transition sections from the fan are necessary on draw through systems, thereby reducing fabrication cost
- Burners can be horizontally mounted on "downflow" applications, eliminating the need for turning sections and saving cost, space and weight
- Low NOx / carbon monoxide free burners also available in order to increase safety and reduce atmospheric pollution

Humidifiers

Generated Steam Humidifier

Consists of immersed electrodes, steam cylinder, stainless steel distribution pipe and electronic controls for water regulation and automatic flushing.

Air Washer

- Externally mounted pump, with a removable strainer, draws water from an aluminium alloy tank, which has a liquid level regulator, overflow, drain and flushing device
- Spray distribution (through single or double row sprays) is via a nylon pipe and nozzles
- Incorporated air tight access hatch, with porthole, an internal light, a perforated air equaliser plate and a droplet eliminator

Wet Deck Humidifier

- Viscose-coated evaporating pack moistened with water, circulated by an internally mounted pump with removable strainer, from a header tank
- Base tank includes a ball valve, overflow and drain
- Assembly is constructed from aluminium alloy sheets

Direct Injection Humidifier

- Electrically or pneumatically operated steam humidifiers can be installed to inject dry, sterile steam into the airstream via steam distribution pipes
- Units are normally supplied with a control valve for actuation by others

Filters

Filter sections are designed for easy front or side withdrawal of the following filter types:

Prefilters

Synthetic or glass-fibre media panel filters, class G2 to G4 arranged in galvanized steel frames or sliding rails.

Main Filters

Synthetic or glass-fibre media bag filters, class M6 to F9 (F7 supplied as standard) arranged in galvanized steel frames with gaskets to avoid air bypass.

Final Filters

High efficiency compact cell filters, class H10 to H14 according to EN 1822, fixed with brackets, nuts and bolts or clamps to a heavy galvanized steel gasketted structure. Stainless steel welded frames and DOP testing of filter bank available if required.

Dampers

Extruded aluminium dampers are the opposed or parallel blade type. The flanged frame is pre-drilled for ductwork connection. Side gaskets are installed to minimise air leakage. Spindles are manufactured from aluminium and have Teflon or nylon bushes. Control links are aluminium.

Heat Recovery

YMA air handling units are available with a range of Heat recovery devices that reduce energy usage and lower the equipment running costs...

Plate Heat Exchanger

Manufactured from aluminium or plastic plates (optional stainless steel or polycarbonate) and turbulation channels to permit heat transfer from warm to colder air systems without mixing the two air streams.

Heat Pipe

Vertically mounted tubes, charged with refrigerant, exchange heat by the evaporation of warm air stream in the lower section and re-condensation in the cold air stream in the upper section.

Thermal Wheel

Available with a hygroscopic or non-hygroscopic rotor for recovering and transferring heat energy from the exhaust to the supply air streams.

Sound Attenuation

Standard attenuation sections comprise baffles of galvanized steel and non-hygroscopic material, with option for either perforated plate or 'melonex' liners.

Lighting & Electrical

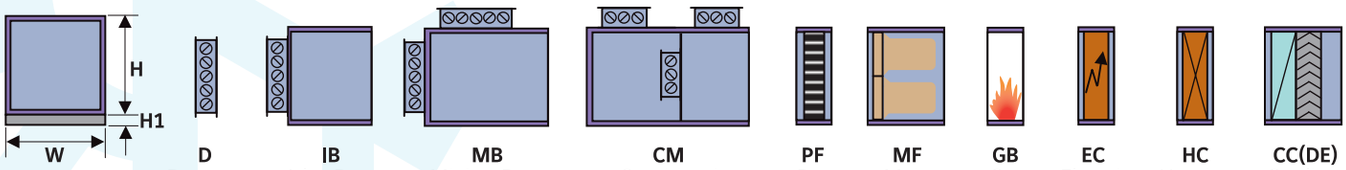
Optional water resistant bulkhead lights and switches can be supplied. Fan motors and other electrical items can be pre-wired to local isolators and /or terminal.

Factory Packaged Controls

All units can be supplied with factory fitted controls, sensors and control panels. Using YORK SmartPAC packaged control system incorporating Johnson Controls range of system controllers, units are supplied to site pre-wired, programmed and tested thus saving time and money associated with traditional site installation and commissioning methods. All installations will be compliant with the latest applicable National/European codes.

METASYS® LONMARK® INTEROPERABILITY ASSOCIATION ASHRAE BACnet™

YMA "Quick Size" Guide



D Damper

IB Inlet Box

MB Mixing Box

CM Combined Mixing Box

PF Pre Filter

MF Main Filter

GB Gas Burner

EC Electric Coil

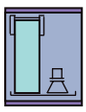
HC Heating Coil

CC(DE) Cooling Coil

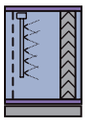
YMA Size	Duty (m^3/s)	Cross Section (mm)			D 1/1	D 1/2	1B (1)		MB		CM (1a)		PF		MF		GB		EC		HC	(1
		H	H1	W	kg	kg	l	kg	l	kg	l	kg	l	kg	l	kg	l	kg	l	kg	l	
610/750	0.25-0.44	610	100	750	9	5	350	40	500	43	1000	71	350	34	800	66	N/A	#	450	77	350	
690/900	0.42-0.74	690	100	900	12	6	350	49	500	49	1000	82	350	39	800	76	N/A	#	450	84	350	
690/1050	0.55-0.95	690	100	1050	15	8	350	57	500	56	1000	93	350	44	800	86	N/A	#	450	93	350	
970/950	0.79-1.39	970	100	950	18	9	350	61	600	66	1200	111	350	47	800	86	Dimensions & weights variable dependent on duty & application. Please contact your local YORK® office for verification.		450	125	350	
970/1150	1.08-1.90	970	100	1150	22	11	350	70	600	75	1200	124	350	52	800	96			450	153	350	
970/1350	1.37-2.40	970	100	1350	26	13	350	80	600	81	1200	138	350	58	800	109			450	187	350	
1210/1250	1.63-2.86	1210	100	1250	27	14	350	82	800	103	1600	181	350	60	800	110			450	181	350	
1210/1500	2.11-3.70	1210	100	1500	34	17	350	94	800	113	1600	198	350	66	800	124			450	209	350	
1210/1700	2.50-4.37	1210	100	1700	39	19	350	104	800	123	1600	215	350	72	800	136			450	237	350	
1210/2000	3.07-5.38	1210	100	2000	43	21	350	114	800	132	1600	232	350	78	800	145			450	265	350	
1530/1500	2.77-4.85	1530	100	1500	39	20	350	106	1000	150	2000	268	350	72	800	139			450	320	350	
1530/1750	3.40-5.95	1530	100	1750	48	24	350	120	1000	162	2000	289	350	79	800	152			450	343	350	
1530/2000	4.03-7.06	1530	100	2000	54	27	350	131	1000	173	2000	310	350	87	800	171			450	356	350	1
1530/2200	4.54-7.94	1530	100	2200	59	29	350	142	1000	185	2000	331	350	93	800	180			450	369	350	1
1890/1700	4.21-7.37	1890	100	1700	55	28	350	133	1250	207	2500	385	350	88	800	175			450	175	350	1
1890/1900	4.86-8.51	1890	100	1900	58	29	350	141	1250	220	2500	411	350	94	800	185			450	399	350	1
1890/2150	5.51-9.64	1890	100	2150	68	34	350	157	1250	234	2500	437	350	100	800	204			450	204	350	1
1890/2400	6.32-11.06	1890	100	2400	78	39	350	172	1250	248	2500	462	350	107	800	214			450	497	350	1
2170/1950	5.76-10.1	2170	100	1950	68	34	350	158	1400	268	2800	491	350	104	800	206			450	446	350	1
2170/2150	6.53-11.42	2170	100	2150	79	39	350	174	1400	283	2800	520	350	109	800	215			450	493	350	1
2170/2400	7.49-13.1	2170	100	2400	87	43	350	188	1400	298	2800	548	350	116	800	227			450	550	350	1
2170/2650	8.45-14.78	2170	100	2650	98	49	350	204	1400	314	2800	577	350	123	800	243			450	607	350	1
2410/2250	7.78-13.61	2410	100	2250	91	46	350	193	1600	339	3200	628	350	118	800	234			450	570	350	1
2410/2500	8.86-15.50	2410	100	2500	100	50	350	207	1600	356	3200	660	350	124	800	251			450	636	350	1
2410/2750	9.94-17.40	2410	100	2750	113	56	350	225	1600	373	3200	693	350	132	800	274			450	702	350	1
2410/2950	10.80-18.90	2410	100	2950	122	61	350	240	1600	390	3200	725	350	140	800	298			450	769	350	1
2650/2550	10.08-17.64	2650	100	2550	113	56	350	227	1700	399	3400	740	350	134	800	262			450	721	350	1
2650/2800	11.28-19.74	2650	100	2800	128	64	350	247	1700	418	3400	774	350	141	800	286			450	787	350	1
2650/3050	12.48-21.84	2650	100	3050	138	69	350	262	1700	435	3400	809	350	148	800	309			450	853	350	2
2650/3300	13.68-23.94	2650	100	3300	148	74	350	278	1700	453	3400	843	350	157	800	319			450	919	350	2
2650/3550	14.8-26.0	2650	100	3550	158	79	350	293	1700	470	3400	877	350	168	800	33 2			450	984	350	2

1. *IB weight with D1/1*
1a. *CM data for 100% fresh air/exhaust*
2. *Section length variable 600mm - 1800mm dependent on module arrangement*
3. *HC weight for 1 row dry coil*
4. *CC weight for 6 row dry coil*
5. *Adiabatic evaporating pack*
6. *AW dry weight*
7. *CF weight includes motor and drive set*

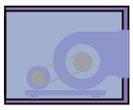
Dimensions are for guidance only - units are available in increments of 40mm in height and 50mm in width. Section le



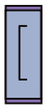
EH
Evaporative Humidifier



AW
Air Washer

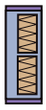


CF
Centrifugal Fan Section

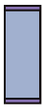


DS
Diffuser Section

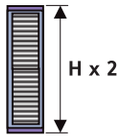
SA
Sound Attenuator



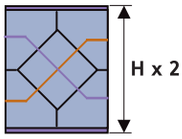
FF
Final Filter



ES
Empty Section



HW
Heat Wheel



PX
Plate Heat Exchanger

EP
End Panel

C (3)		CC (4)		DE	EH (5)		AW (6)		CF (7)		DS		SA (8)		FF (9)		ES		HW (10)		PX		EP
	kg	kg	l	kg	l	kg	l	kg	l	kg	l	kg	l	kg	l	kg	l	kg	l	kg	l	kg	kg
0	34	650	60	5	N/A	####	N/A	####	1100	140	350	33	1050	107	350	36	600	48	800	160	1050	90	9
0	40	650	74	10	N/A	####	N/A	####	1100	154	350	40	1050	119	350	42	600	56	800	170	1050	110	12
0	47	650	88	20	N/A	####	N/A	####	1100	168	350	46	1050	142	350	45	600	64	800	180	1050	155	15
0	50	650	100	10	700	125	1600	195	1300	175	700	75	1050	154	350	45	600	66	800	170	1400	147	18
0	57	650	120	20	700	140	1600	223	1300	197	700	85	1050	183	350	60	600	75	800	220	1400	176	22
0	64	650	140	25	700	161	1600	252	1300	216	700	94	1050	213	350	80	600	82	800	245	1400	242	26
0	66	650	152	30	700	174	1600	273	1700	335	700	96	1050	216	350	85	600	82	800	200	1600	195	27
0	75	650	178	35	700	195	1600	297	1700	360	700	107	1050	251	350	100	600	91	800	240	1600	240	34
0	83	650	205	45	700	216	1600	321	1700	393	700	117	1050	285	350	140	600	98	800	265	1600	280	39
0	91	650	231	50	700	236	1600	345	1700	452	700	126	1050	297	350	165	600	106	800	299	1600	320	43
0	86	650	215	50	700	216	1600	346	1900	493	700	119	1050	298	350	140	600	100	800	252	1600	350	39
0	95	650	247	60	700	243	1600	382	1900	541	700	128	1050	339	350	175	600	107	800	301	1600	415	48
0	105	650	281	70	700	270	1600	417	1900	633	700	140	1050	353	350	200	600	115	800	376	1600	470	54
0	113	650	308	80	700	296	1600	453	1900	654	700	149	1050	393	350	240	600	122	800	410	1600	534	59
0	106	650	296	80	700	262	1600	404	2100	762	700	141	1050	357	350	210	600	116	800	333	1900	560	55
0	118	650	330	90	700	291	1600	440	2100	791	700	152	1050	406	350	250	600	124	800	412	1900	635	58
0	127	650	364	105	700	322	1600	478	2100	818	700	163	1050	451	350	290	600	133	800	447	1900	720	68
0	138	650	401	115	700	351	1600	517	2100	842	700	173	1050	502	350	330	600	140	800	482	1900	795	78
0	129	650	373	109	700	329	1600	517	2400	879	700	165	1050	505	350	290	600	133	800	424	1900	885	68
0	141	650	417	125	700	358	1600	555	2400	907	700	176	1050	517	350	340	600	142	800	483	1900	1005	79
0	152	650	463	145	700	388	1600	593	2400	1053	700	188	1050	571	350	375	600	148	800	523	1900	1115	87
0	163	650	508	165	700	417	1600	630	2400	1081	700	198	1050	626	350	425	600	157	800	568	1900	1235	98
0	155	650	472	140	700	380	1600	577	2700	1171	700	189	1050	627	350	395	600	150	800	495	2200	1242	91
0	167	650	523	155	700	421	1600	623	2700	1368	700	199	1050	689	350	480	600	159	800	570	2200	1411	100
0	189	650	574	170	700	461	1600	669	2700	1542	700	212	1050	701	350	505	600	166	800	609	2200	1542	113
0	192	650	625	185	700	500	1600	715	2700	1576	700	223	1050	713	350	550	600	174	800	619	2200	1610	122
0	182	650	584	170	700	472	1600	684	3000	1622	700	215	1050	763	350	500	600	168	800	676	2500	1600	113
0	196	650	640	175	700	506	1600	725	3000	1660	700	224	1050	832	350	540	600	176	800	686	2500	1785	128
0	208	650	698	185	700	540	1600	764	3000	1922	700	237	1050	900	350	590	600	183	800	730	2500	1970	138
0	223	650	754	200	700	574	1600	806	3000	1958	700	245	1050	968	350	630	600	191	800	740	2500	2150	148
0	236	650	811	220	700	609	1600	847	3000	2446	700	256	1050	980	350	680	600	198	800	754	2500	2330	158

8. *SA based on standard splitter length of 900mm, 600mm, 750mm, 1200mm, 1500mm, 1800mm long also available*

9. *Minimum of 1 ES required for access/replacement of cells*

10. *Add 1 ES before and after HW*

11. *ALL DIMENSIONS AND WEIGHTS ARE APPROXIMATE ONLY*

12. *Lengths shown are for individually constructed sections; where 2 or more sections are manufactured in a single casing, subtract 75mm for each component section from total length*

n lengths are sized to the nearest millimetre, with flexible shipping splits, to ensure the best solution to your application.

YMA-C
"Hygienic" Air Handling Units

A complete range from 0.8 m^3/s to 60 m^3/s

A range of YORK® "Hygienic"Air Handling Units, offering unique solutions to the application of Central Station Air Conditioning in a sterile environment.

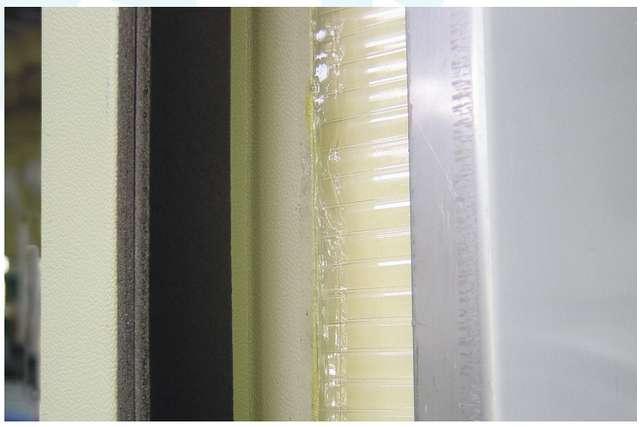
There are many factors affecting air quality, comfort conditions and the efficient operation of Air Handling Units.
These include:

- **Mechanical performance**
- **Thermal transmission through the Air Handling Unit casing**
- **Air leakage**
- **Noise transmission**
- **Bacteria protection**
- **Air cleanliness and filter efficiency**
- **Fan and motor efficiency**
- **Dehumidification**
- **Humidification**

These factors are valid for the air conditioning of commercial buildings and hotels etc., as well as hygiene sensitive environments such as hospitals, laboratories, clean rooms, food processing and a variety of other process systems.

YORK® YMA-C AHU'S have been specifically designed to address all of these factors:

- **Mechanical performance**
- **Thermal efficiency**
- **Air leakage and cleanliness**



- In other types of air handling unit constructions, the majority of **air leakage** occurs between the frame and the panels. This is why YMA-C units are manufactured from 88mm thick sheet metal panels insulated with CFC free PU foam. YMA-C Air Handling Units comprise an extremely rigid sealed frame construction, therefore gaps between panel junctions are minimal, and consequently air leakage is greatly reduced.
- Non-metallic isolating frame around the internal perimeter of each panel is also included, thus eliminating **thermal transmission** through the casing. An external aluminium profile maintains structural integrity and air-tightness without compromising the thermal-bridging characteristics of the unit.
- The construction of the units achieves the highest classification available for both thermal transmittance (T1) and thermal bridge factor (**TB1**) when measured against **Eurovent test standards** of prEN 1886:2007.

Flexibility

- YMA-C Air Handling Units can be manufactured in varied configurations, with a wide selection of components, to meet customer requirements.
- To ensure maximum flexibility and guarantee the best solution for each application, units are available in 50mm increments in both height and width.
- Units are also available in line with the requirements of all European hospital sector specifications.

Mechanical characteristics-prEN 1886:2007

PANEL TYPE	CASING STRENGTH	CASING AIR LEAKAGE	THERMAL TRANSMITTANCE	THERMAL BRIDIGING
88	D1	L1	T1	TB1

Casing Materials	Centrifugal Fans	Filters	Cooling Coils	Heating Coils	Heat Recovery	Humidifiers
Prepainted Steel	Forward Curved	Panel	Chilled Water	Hot Water	Cross Flow	Electronic Steam
Plastic Coated steel	Backward Curved	Bag or HEPA	Direct Expansion	Electric	Run-Around	Mains Steam
Stainless Steel	External motor option	Carbon Activated		Steam	Dessicant	Cell
Aluminium	Plug Fan				Thermal Wheel	Spray

Bacteria Protection

To protect the system from bacteria development and maximise **Indoor Air Quality**, two main conditions must occur:

1. **Prevent the moist conditions** that encourage bacterial and fungal development by using steam humidifiers rather than water spray systems.

2. Ensure that the Air Handling Unit is frequently cleaned.

- The internal construction of the unit avoids that any of the interior support member is exposed and ensures the internal surface is perfectly smooth without obstructions or crevices, thus offering no sanctuary for harmful bacteria to settle and breed and ensuring **high IAQ and cleanliness levels**.
- The whole AHU interior can be made from stainless steel, and has an option for all floor panels to be sloped to give continuous drainage for all sections and provide maximum opportunity for internal cleaning.
- All units can be tested for **air leakage** at the factory, and HEPA filter installations can also be particulate (DOP) tested to eliminate any risk of contamination from dust, dust mites, moulds, mildew, pet dander, pollen and other micro-organisms. Other components available include silencers, dampers, and a range of accessories.
- Units can also be supplied with an on board DDC control package incorporating the JCI SmartPAC control system, which allows units to be **pre-engineered, wired and tested before shipment**. Where units are delivered in sections, a plug-and-play quick connection system allows fast installation.
- **Accurate computer selection** ensures cost effective matching of all components to satisfy the specified conditions. (*)

METASYS® LonMark® Interoperability Association ASHRAE BACnet™

(*) please contact your local Johnson Controls sales office for Air Handling Unit selections and further information

YMB / YPS
Modular Air Handling Units

A complete range from 0.28 m^3/s to 28 m^3/s

Building and indoor climate requirements are constantly evolving. They can be influenced by many factors: energy legislation, occupancy churn, lighting, IT infrastructures... all important reasons that highlight the need for reliable, efficient Air Handling units.

Suitable for use in either new building developments or upgrades and refitting of existing buildings, our **YMB** range of AHU is a range of modular, Fixed Aspect Ratio units designed with efficiency and cost in mind to meet the needs of more 'commercial' installations.

Our knowledge, flexibility and commitment to the customer address four primary requirements of building owners and designers– efficiency, flexibility, sustainability, and confidence.




YMBS / YMBD Modular Air Handling Unit characteristics

Available sizes	12	
Airflow range (m^3/h)	1 000 ~ 100 000	
Application	· housing and retail construction industry · public utility buildings · industrial facilities construction · leisure facilities	
Basic options	· G4 class filters · F5, F7, F9 class filters · heat recovery · water / steam / glycol / electric heater · water / glycol / freon cooler · humidification, fan and attenuation section	
Additional options	· sub-assemblies manufactured as explosion-proof · swimming pool version · hygienic version · YORK® SmartPAC Factory Packaged Controls	
Heat recovery	· recirculation · cross-flow heat exchanger · rotary heat exchanger	· heat pipe · glycol recovery system · heat pump
Installation type	· indoors (YMBS) / outdoors (YMBD)	

CE

YPS Modular Air Handling Unit characteristics

Available sizes	4
Airflow range (m^3/h)	500 ~ 5 100
Application	· in suspended ceilings and wherever building construction limitations do not allow other systems to be implemented, e.g. in: · industrial workshops · warehouses · wholesale establishments · workshops · offices, etc
Basic options	· G4 class filters · F5, F7, F9 class filters · heat recovery · water / steam / glycol / electric heater · water / glycol / freon cooler · humidification, fan and attenuation section
Additional options	· sub-assemblies manufactured as explosion-proof · automation module · automation module designed to cooperate with intelligent BMS system · YORK® SmartPAC Factory Packaged Controls
Heat recovery	· cross-flow heat exchanger · recirculation
Installation type	· indoors

YMBS/YMBD and YPS performances

YMBS/YMBD*				
Unit size	Airflow range [m^3/h]	Width B	Height H1	Height H2
Insulation 50 mm				
1	1 000 - 3 000	690	600	1 280
2	2 600 - 4 100	740	700	1 480
3	3 900 - 6 100	980	700	1 480
4	6 000 - 9 400	980	1 010	2 100
5	8 000 - 12 600	1 290	1 050	2 100
6	9 600 - 15 100	1 290	1 250	2 500
5-BIS	11 000 - 17 000	1 580	1 050	2 100
6-BIS	13 200 - 21 000	1 580	1 250	2 500
7	13 500 - 21 300	1 580	1 370	2 740
7-BIS	18 000 - 28 000	1 885	1 370	2 740
8	21 300 - 33 700	1 885	1 670	3 340
9	26 000 - 41 000	1 885	2 020	4 040
8-BIS	30 000 - 46 000	2 400	1 670	3 340
10	34 000 - 53 000	2 400	2 020	4 040
8A-BIS	38 000 - 59 000	3 000	1 670	3 340
11	43 000 - 69 000	2 400	2 500	5 000
10-BIS	46 000 - 71 500	3 000	2 020	4 040
12	57 000 - 90 000	3 000	2 500	5 000
12-BIS	68 000 - 106 000	4 800	2 020	-

* YMBD only in 50 mm thick insulation (optionally, YMBS and YMBD in 70 mm thick insulation)

YPS			
Unit size	Airflow range [m^3/h]	Width B	Height H
Insulation 40 mm			
1	500 - 3 000	760	395
2	1 100 - 4 500	1 070	395
3	800 - 3 600	760	525
4	1 700 - 5 100	1 070	525

YMBS/YMBD

YPS

YBV
“Plug and Play” Air Handling Units

A complete range from 400 m^3/h to 5000 m^3/h

Introducing the new YBV series of self contained Air Handling Units from YORK®.

YBV units are a range of compact Air Handling units offering true Plug and Play capability – Their ready-to-use control functions are provided for accessories such as cooling units and heating coils and wiring is done by means of cables with quick connectors. Additionally, energy-saving fans and efficient heat recovery devices offer full control of temperatures, airflows and operating times to give you optimal operational economy.

For ease of maintenance, inspection doors are large for easy component access and all major components are side removable. **YBV series** units can be selected and ordered quickly and easily, and have a short lead time – offering you a space saving, time saving, cost saving, energy saving solution!

The **YBV** range comprises the following models:

- **YBVS series**, with counter flow or cross flow heat exchanger
- **YBVR series**, as per YBVS series but with rotary wheel heat exchanger
- **YBVD series** – compact, low capacity range with counter flow or cross flow heat exchanger

YBVS Air Handling Unit characteristics

Available sizes	4
Airflow range (m^3/h)	400 ~ 3 800
Application	· offices · kindergatrens · houses, shops · public utility buildings, etc
Basic options	· G4 class filter · heat recovery · water / electric heater · 2 axial-flow centrifugal fans · by-pass · automation module
Additional options	· EC fans · automation module designed to cooperate with a larger BMS system
Heat recovery	· counter-flow heat exchanger (in size 1) · cross-flow heat exchanger (in sizes 2, 3, 4)
Installation type	· indoors
Other features	· self-supporting housing structure · plug&play inistallation type · ducts connected from the top · low noise level

CE

System advantages

- Easy and simple installation (plug&play)
- Reduced cost of operation due to high-effinciency heat exchanger (91% recovery - YBVS-1)
- Low noise level
- A by-pass integrated with the cross-flow heat exchanger allows for operation without heat recovery
- Self-supporting housing structure - without aluminium profiles
- Attractive and minimalistic style
- Ensured supply of a suitable volume of fresh and additionally cleaned air
- Ensured high quality air and good effect on the health of people staying rooms
- Automatic components supplied with Johnson Controls Factory Packaged Controls

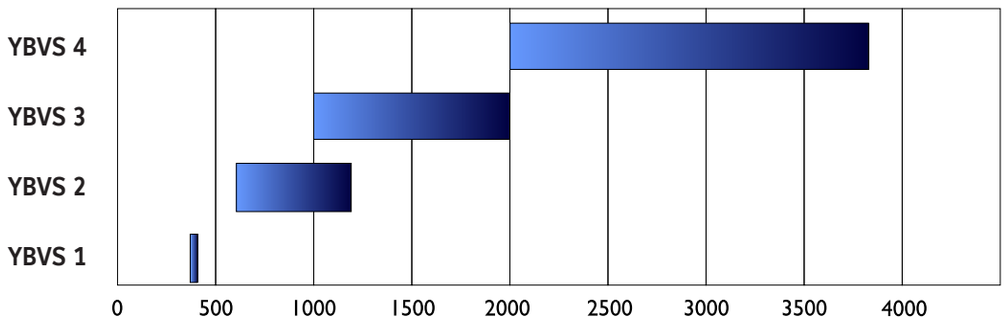
The **YBVS 2, 3, 4** unit has two axial-centrifugal fans. Supply fan removes contaminated warm air from the room and the exhaust fan, transports cold feed air.

Both streams are decontaminated on filters and pass through the cross-flow heat exchanger, where heat is exchanged between the streams. Additionally, fresh air, after passing through the cross-flow exchanger, is heated by an electrical or water heater to the required temperature of the supplied air.

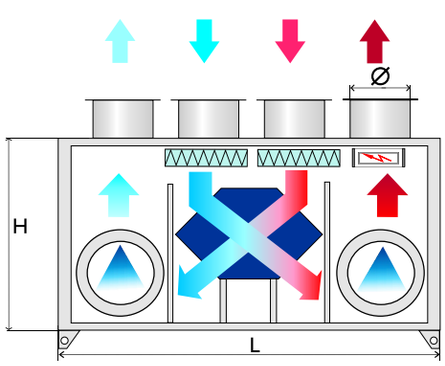
The unit has an integrated by-pass.

Functions:

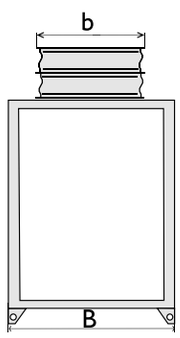
- Night cooling of rooms during summer by bypassing the cross-flow exchanger, when the outdoor temperature is lower than the indoor temperature.
- Defrosting of the heat exchanger

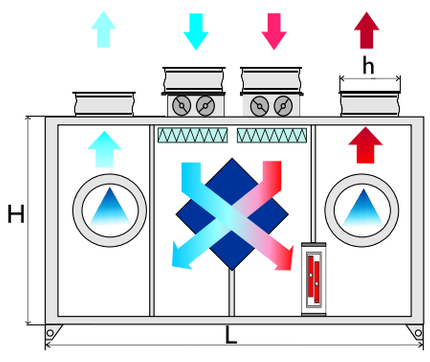


Unit size	Weight [kg]	Dimensions [mm] Width B	Height H	Length L	Flexible connections, dampers B x H	Airflow range [m³/h] min	max	Max heat recovery [%]
1	85	550	600	1 100	fi 160	400	400	91
2	180	750	850	1 300	400 x 200	600	1 200	72
3	240	800	1 000	1 600	500 x 315	1 000	2 000	78
4	380	880	1 300	2 200	630 x 400	2 000	3 800	70



YBVS 1





YBVS 2, 3, 4

YBVR Air Handling Unit characteristics

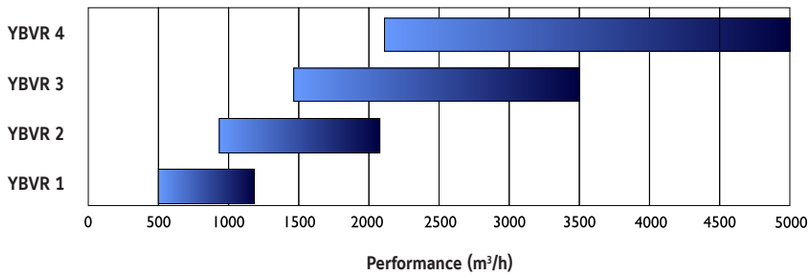
Available sizes	4
Airflow range (m³/h)	500 ~ 5 000
Application	· offices, houses, shops · kindergatrens · public utility buildings, etc
Basic options	· G4, M5, F7 class filters · heat recovery - rotary heat exchanger · water / electric heater · 2 EC fans modules · automation module
Additional options	· cooling section · automation module designed to cooperate with a larger BMS system
Heat recovery	· rotary heat exchanger
Installation type	· indoors
Other features	· self-supporting housing structure · ducts connected from the top · plug&play inistallation type · low noise level

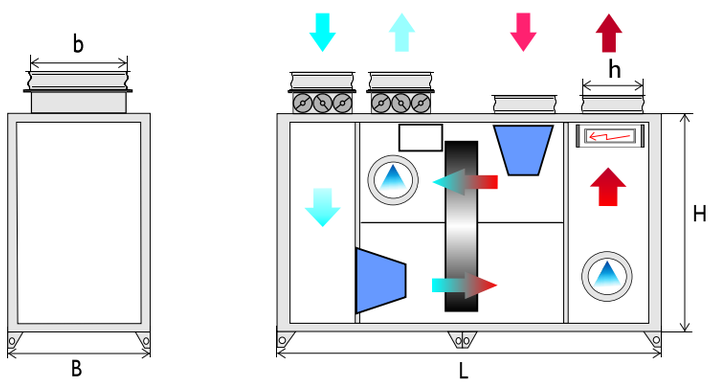
System advantages

- Easy and simple installation (plug&play)
- Reduced cost of operation due to high-effinciency heat exchanger with 90% recovery
- Low noise level
- Attractive and minimalistic style
- Ensured supply of a suitable volume of fresh and additionally cleaned air
- Ensured high quality air and good effect on the health of people staying rooms
- Automatic components supplied with Johnson Controls Factory Packaged Controls

The **YBVR** unit has fans with EC motors. Supply fan removes contaminated warm air from the room and the exhaust fan, transports cold feed air.

Both streams are decontaminated on filters and pass through the rotary wheel heat exchanger, where heat is exchanged between the streams. Additionally, fresh air, after passing through the rotary wheel exchanger, is heated by an electrical or water heater to the required temperature of the supplied air.

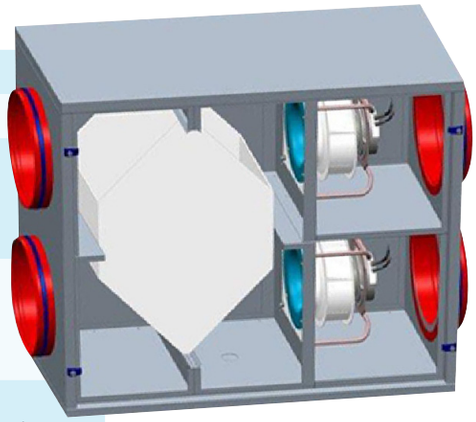




Unit size	Weight [kg]	Dimensions [mm] Width B	Height H	Length L	Flexible connections, dampers B x H	Airflow range [m³/h] min	max
1	180	750	900	1 400	300 x 200	500	1 200
2	270	900	1 100	1 700	400 x 200	900	2 100
3	360	1 100	1 250	1 800	600 x 300	1 450	3 500
4	440	1 200	1 400	2 050	800 x 400	2 100	5 000

CE

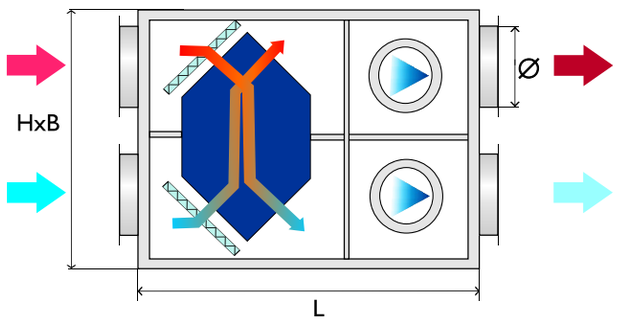
YBVD Air Handling Unit characteristics



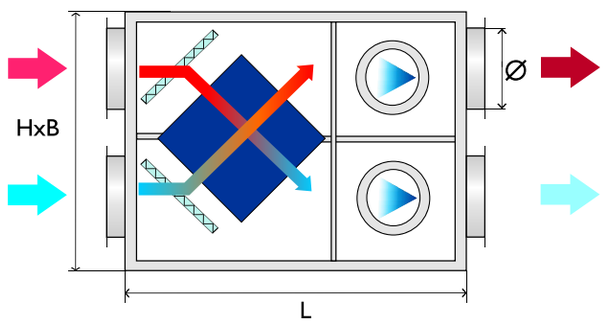
Available sizes	2
Airflow range (m^3/h)	800 ~ 1 200
Application	· offices · kindergatrens · houses, shops · public utility buildings, etc
Basic options	· G4 class filter · heat recovery - counter-flow/cross-flow heat exchanger · 2 EC fans modules · automation module
Additional options	· cooling section · automation module designed to cooperate with a larger BMS system
Heat recovery	· counter-flow heat exchanger · cross-flow heat exchanger
Installation type	· indoors
Other features	· self-supporting housing structure · plug&play inistallation type · low noise level

Dimensions [mm]							
Unit size	Weight [kg]	Width B	Height H	Length L	Flexible connections, dampers Ø mm	Airflow range [m^3/h]	Max efficiency [%]
Counter-flow exchanger							
1	150	560	1 009	1 459	350	800	90
2	180	760	1 009	1 459	350	1 200	90
Cross-flow exchanger							
1	130	560	1 009	1 213	350	800	82
2	170	860	1 009	1 213	350	1 200	82

YBVD
with counter-flow exchanger



YBVD
with cross-flow exchanger



CE Manufacturer reserves the rights to change specifications without prior notice.

YTA
Adiabatic Air Handling Unit

YTA series units utilise free cooling with adiabatic cooling to ensure high system energy savings.

The YTA series units are the ideal solution to cool air in systems where environmental sustainability and energy savings are priorities, such as large, best-of-breed data centers, ensuring a performance similar to direct **FREE COOLING** but without the risk of contaminating air-conditioned premises, with air contains pollutants, dust, and humidity.

The units are designed to be installed outdoors, typically on the roof, and consist of two treatment sections, one for inside air and another for outside air, physically separated and each with their own filtration and air movement systems.

Features

- EUROVENT certified Plate Heat Exchanger
- OXYVAP® evaporative panel
- White RAL 9010 metal structure
- Panels with 50-mm thermal and acoustic insulation
- G4-class efficiency air filters with dirty filter alert
- Electronic EC FANS
- Electric panel complete with control and safety devices
- Control microprocessor with graphic display
- Unit shutdown system for the presence of fire
- RS485 Modbus® RTU slave card
- RJ45 ethernet card

Indirect free cooling with adiabatic cooling

The indirect FREE COOLING system with adiabatic cooling includes both the technology of air-to-air heat recovery and that of adiabatic cooling, in which water is evaporated to cool down the outside air.

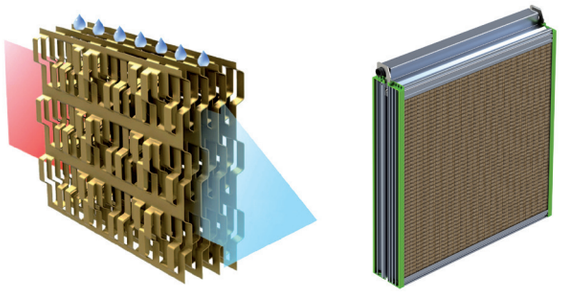
Being able to exploit the **FREE COOLING system even at temperatures of 30°C/35%Rh, these units achieve very high energy efficiency, offering energy savings of up to 80% when compared to a comparative mechanical cooling system.**

An innovative evaporative panel

In order to maximise the system efficiency, an innovative evaporative panel is used that allows **saturation efficiency greater than 90% whilst requiring up to 60% less water.**

Thanks to the **OXYVAP® system**, which is comprised of specially **formed and treated aluminium fins**, it is possible to:

- **Use drinkable water**. No expensive water demineralisation systems are required.
- **Cut down on water consumption**. Over 60% water reduction with respect to conventional evaporative panels and spraying systems.
- **Eliminate the risk of mould, algae and pathogenic organism formation.** The surface treatment of aluminium fins and the absence of a collection and water circulation tank eliminates the risk of pathogenic organism formation.



Available accessories

Direct expansion:

- Direct expansion, supplementary post cooling circuit with DC inverter compressors
- Power supply line for remote condenser
- Power supply line with speed regulator for remote condenser
- Condensing regulation with 0-10V signal for remote condenser with EC fans
- "LT Kit" for operation with low temperature outside air with remote condenser
- Oversize liquid receiver
- Check valves on the supply and liquid pipes
- Water-cooled condenser
- Water-cooled condenser with a condensing temperature adjustment valve
- "HT Kit" for operation at high condensing temperatures

Chilled water:

- Chilled water, supplementary post cooling circuit with adjustment two-way valve
- Three-way control valves
- Inlet and outlet water temperature sensors
- "Power valve" kit

Mechanical and structural:

- Condensate drain and adiabatic panel discharge pump
- Outside air flow motorised dampers
- Inside air flow motorised dampers
- Motorised damper for environment overpressure management
- M5 efficiency class air filters

Electrical:

- Alternative voltages available: 460V/3ph/60Hz - 380V/3ph/60Hz - 230V/3ph/60Hz
- Electrical supply line without neutral
- Automatic transfer switch (ATS), "Basic" version
- Automatic transfer switch (ATS), "Advanced" version

Regulation:

- Constant air flow control
- Constant pressure control
- Local network set up and connection cable
- User terminal for remote installation
- Flooding detection system

Adiabatic Air Handling Unit

Enhanced operating modes

The units with indirect FREE COOLING system and adiabatic cooling can work in three operating modes:

Winter mode

During the winter period, units **exploit the plate heat exchanger to cool down the air coming from the system**. The outside air flow is adjusted to provide the cooling capacity needed to cool down the system, **thus optimising efficiency and energy savings**. The air flow to the system is kept constant by managing the air flow rate or the environment pressure.

Summer mode

During the summer period, **the evaporative panel is enabled**. This, by saturating the outside air flow, reduces the temperature thereof. **The plate heat exchanger is also utilised to cool the return air coming from the system / conditioned space**. The outside air flow and the activation of the evaporative panel are adjusted to provide the cooling capacity needed to cool down the system, **thus optimising efficiency and energy savings**. The air flow to the system is kept constant by managing the air flow rate or the environment pressure.

Supplementary post cooling

Under extreme external conditions, it is possible to install a supplementary **post cooling circuit which allows you to further cool down the air already treated by the plate heat exchanger**, keeping the heat and humidity conditions required by the system. This can be a direct expansion or a chilled water supplementary circuit.

Technical features

Version for outdoor installation with crossed air flows

Free cooling air conditioners with adiabatic cooling

Model		120
Performances		
Nominal cooling capacity (1)	kW	120
EER (3)		9.60
Nominal cooling capacity (2)	kW	100
EER (3)		8.10
Air flow rate	m3/h	30 000
Water consumption (4)	l/h	230
"Structure" noise level (5)	dB(A)	64
"Air inlet" noise level (5)	dB(A)	80
"Air Supply" sound level (5)	dB(A)	86
Dimensions and weights		
Width	mm	6 530
Depth	mm	2 500
Height	mm	2 900
Net weight	kg	4 500

(1) Performance refers to: Outside air: 35°C – 40%Rh; inside air: 38°C – 30%Rh, ΔT 12 K. External static pressure: 50 Pa.
(2) Performance refers to: Outside air: 35°C – 40%Rh; inside air: 35°C – 30%Rh, ΔT 10 K. External static pressure: 50 Pa.
(3) EER (Energy Efficiency Ratio) = total cooling capacity / fans power consumption.
(4) Water consumption referred to: Outside air: 35°C – 40%Rh; Conductivity: ≤1000 µS/cm; Network pressure: 3 Bar
(5) Sound levels at a 2 m distance, in a free field as per UNI EN ISO 3744:2010

YORK® Fan Coil units

Driven by innovative trends and modern technology, the YORK® Fan Coil Units have been designed around a platform of models, versions and accessories, which have been independently tested and certified by Eurovent. The YORK® Fan Coil range meets today's demanding requirements of performance, size, acoustics, low energy, ease of installation and maintenance.

An extensive offering

- One of the **most versatile** ranges of fan coils on the market today. Wall and ceiling mounted units, exposed or concealed with centrifugal fan, are included, and with cooling capacities ranging from 0.6 kW to 9.5 kW.

- Dramatic **electrical consumption reduction** of up to 40% comparative to previous models. This is achieved thanks to the supply of all YORK® Fan Coil Units equipped with centrifugal fans and electric motors, and with 6 speed motors as standard to offer greater flexibility in the selection of products.

- **Energy saving brushless motor** technology option available. Its combination with a dedicated frequency inverter and unit controller to regulate the fan speed enables higher efficiencies, even at low rotational speeds, lower unit noise, constant speed characteristics and an increase in motor lifetime expectancy. In comparison to the traditional units equipped with asynchronous three-speed-motors, units with brushless motors can obtain a considerable energy saving, by reducing the power consumption by up to 70%.

- A full range of **factory fitted Johnson Controls valve and pre-configured control options** is offered. This in addition to a patented 'wireless' control option - offering greater flexibility in the installation of units, with the highest precision in monitoring and maintaining the desired comfort conditions.

- **High pressure 'Blower' units** are also available. They can offer up to 31.5 kW of cooling at External Static Pressures of up to 250Pa, and are complemented with a full range of options and accessories covering items such as electrical heating battery, air inlet/outlet diffusers and condensate pumps.

Iconography


Infrared or Wired control


Wired control


Dry mode


Timer

Auto Restart


Sleep mode


Auto Sweep


Ducted Installation


4 Way Air Flow


Air Filter

YFCN Fan Coil Unit centrifugal fan

2 & 4 pipe system

A complete range from 1.0 kW to 7.6 kW

Wired controls

JWC-3V
Remote three speeds controller

JWC-T
JWC-3V + Electronic thermostat and Summer/Winter switch

JWC-AU
Automatic JWC-T

JTM-B
Digital Automatic Remote controller

TMO 503 SV2
Digital Automatic Remote controller to be mounted in the standard light wall box

Infrared control

TUC03 Terminal unit controller
BacNET and N2 Metasys network compatible

YFCN is a range of Fan Coil Units that continues the YORK® tradition based on high reliability and low noise levels. It is the result of great commitment in terms of energy and resouces to offer a more modern product from every angle, while still delivering the convenience of easy access to the filters in all models.

Moreover each version has the same internal structure, identical in both horizontal and vertical models, in order to standardise production and guarantee a greater flexibility in distribution and installation.

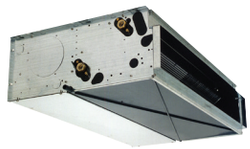
Selection software

Features

- New casing, improved aesthetics, suitable for any modern indoor ambient
- Full range for all needs: 9 sizes suitable for horizontal or vertical mounting with or without casing
- Wireless control option
- Low noise operation
- 3 fan speeds (possible choice between 6 fan speeds)
- Single piece discharge grid
- Several coil choices. Single: 3 or 4 rows; Dual: 3 rows cooling & 2 rows heating
- Electrical heater optional
- Suction and discharge plenum optional
- Factory fitted valve (on/off or modulating) and controller packages
- Painted back panel option
- 4 available versions in all range:
  VC = Vertical Discharge with Casing
  VCB = Vertical Discharge with Casing (floor installation)
  HC = Horizontal Discharge with Casing
  CD = Concealed unit without Casing

YFCN Fan Coil Unit centrifugal fan

1.0 to 7.6 kW



Technical features

Model			140	240	340	440	540	640	740	840	940
Total cooling capacity [kW]	(1)	max	1.23	1.81	2.57	3.12	4.09	4.79	5.58	6.47	7.6
		med	1.02	1.43	1.89	2.28	3.25	3.86	4.64	5.73	6.54
		min	0.67	1.01	1.65	1.83	2.19	2.83	3.56	4.03	4.88
Sensible cooling capacity [kW]	(1)	max	0.97	1.38	1.9	2.34	3.07	3.6	4.23	5.06	6.05
		med	0.79	1.07	1.38	1.68	2.4	2.86	3.47	4.43	5.11
		min	0.51	0.74	1.2	1.34	1.6	2.07	2.62	3.04	3.72
Water flow in cooling [l/h]	(1)	max	212	311	442	537	703	824	960	1 113	1 307
		med	175	246	325	392	559	664	798	986	1 125
		min	115	174	284	315	377	487	612	693	839
Pressure drop in cooling [kPa]	(1)	max	5.6	13.9	11.5	15.5	31.3	36.2	27.7	17.5	23.2
		med	4	9.2	6.7	9	20.8	24.8	20	14.1	17.8
		min	1.9	4.9	5.3	6.1	10.4	14.4	12.5	7.6	10.6
Heating capacity 2 pipes [kW]	(2)	max	1.55	2.2	3.07	3.76	4.83	5.88	6.71	8.43	10.08
		med	1.27	1.72	2.23	2.72	3.81	4.69	5.55	7.36	8.53
		min	0.82	1.18	1.94	2.16	2.53	3.39	4.2	5.06	6.22
Water flow in heating 2 pipes [l/h] *	(2)	max	212	311	442	537	703	824	960	1 113	1 307
		med	175	246	325	392	559	664	798	986	1 125
		min	115	174	284	315	377	487	612	693	839
Pressure drop in heating 2 pipes [kPa]	(2)	max	4.7	11.6	9.2	12.2	25.7	29.3	23.7	14.5	19.3
		med	3.3	7.5	5.4	6.9	17	19.5	16.9	11.4	14.8
		min	1.5	3.9	4.2	4.6	8.3	11	10.3	6.2	8.7
Air flow [m3/h]		max	220	295	385	485	650	760	925	1 200	1 500
		med	175	220	270	335	495	590	735	1 020	1 210
		min	105	145	235	265	315	415	535	655	830
Sound power level [dB(A)]		max	45	47	49	47	48	52	56	60	64
		med	39	40	40	39	41	46	51	56	58
		min	32	30	36	33	31	37	42	45	50
Sound pressure level [dB(A)]	(3)	max	36	38	40	38	39	43	47	51	55
		med	30	31	31	30	32	37	42	47	49
		min	23	21	27	24	22	28	33	36	41
Power supply [V-ph-Hz]			230 / 1 / 50 + E								
Power input [W]		max	33	40	49	57	61	88	103	130	176
Absorbed current [A]		max	0.16	0.18	0.23	0.26	0.27	0.39	0.47	0.58	0.78
Dimensions **	Height	mm	530	530	530	530	530	530	530	530	530
	Width	mm	670	770	985	985	1 200	1 200	1 415	1 415	1 415
	Depth	mm	225	225	225	225	225	225	225	255	255

(1) Room temperature 27°C d.b., 19°C w.b. - Water temperature 7/12 °C.
(2) Room temperature 20°C - Water inlet temperature: 50°C - Water flow rate as for the cooling conditions.
(3) Sound pressure level in a 100 m² room, at 1,5 m distance and riverberating time of 0,5 s.
** Water flow values as Cooling, accordingly to the EUROVENT standards and UNI ENV 1397.*
*** Dimensions refer to the units with casing.*
Data shown is for 4 row cooling version, 2 pipe system.
For performance of 3 row cooling version and/or 4 pipe system unit please contact your local Johnson Controls sales office.

ECM Technology

Running costs. Energy consumption. Life cycle.

These are 3 issues that are becoming more and more important in the choice of Fan Coil Units. With these criteria in mind, Johnson Controls offers the ECM range of FCU.

ECM technology comprises a **brushless motor** combined to a **dedicated electronic device** (inverter). In comparison to conventional units equipped with asynchronous three-speed motors, the fancoil and cassette units with brushless motors can obtain a considerable energy saving, by **reducing power consumption up to 70%**.

Air flow rate can be varied in continuous by means of a 0-10 V signal generated both by our controls or by independent controls systems. The continuous air flow control improves the **acoustic comfort** and allows a more punctual reply to the variation of the thermal loads, enhancing the **stability of ambient temperature**.

Technology

ECM technology consists of a brushless motor combined with an inverter managed by specific regulators. The controller uses a 0-10 VDC modulating signal to regulate the fan speed.

The brushless electric motor is composed of a rotor having permanent magnets, whose magnetic fields interact with the ones produced by the stator winding. The **transfer of current is no longer by mechanical commutator** (sliding contacts) **but by an electronic commutation system**: one electronic controller (inverter) powers the motor's stator and generates rotating magnetic fields, that in turn determine the rotor's speed.

Brusless motor develop much less heat than the traditional brushed motors and they have much lower mechanical resistance than the standard asynchronous maintenance. The absence of brushes eliminates also the main source of electromagnetic noise.

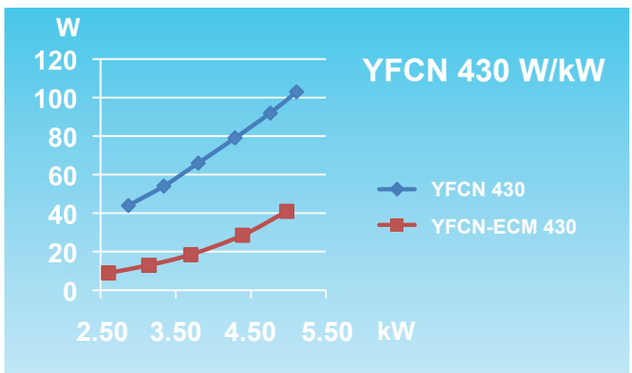
Features

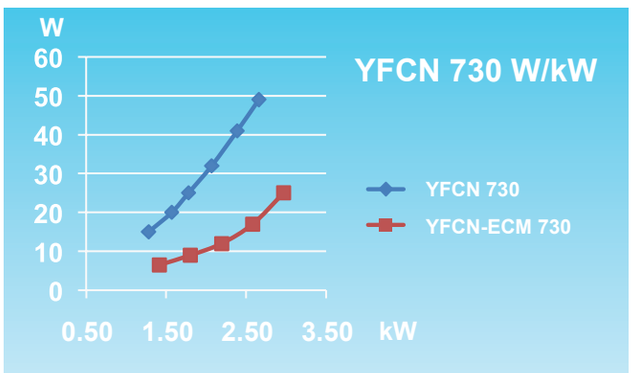
- Brushless motor with inverter.
- 0-10VDC control signal.
- Low mechanical resistance and heat gain
- Continuous regulation of the fan speed.
- Specifically designed electronic and digital regulators, also for BMS systems.
- Possibility to manually set the desired three fan speeds (MIN/MED/MAX).
- Available for fan coil and cassette units.

Advantages (compared to traditional brushed motors)

- Energy saving: electrical absorption reduced up to 70%.
- Higher efficiency: possibility to adapt the air volume and the capacities accordingly to the actual room loads.
- Higher comfort: reduced variation of the temperature and relative humidity in the room.
- Extremely quiet operation.
- Reduced wear and higher reliability.
- Longer life expectancy of the motor.

Power consumption: YFCN versus YFCN-ECM (W/kW)





YFCN-ECM Fan Coil Unit Inverter with centrifugal fan

0.7 to 7.1 kW

Technical features

Model			230	240	430	440	630	640	730	740	930	940
Total cooling capacity [kW]	(1)	max 10v	1.61	1.88	2.97	3.19	3.99	4.54	4.98	5.34	6.36	7.14
		med 5v	1.19	1.33	2.19	2.28	2.94	3.2	3.7	3.84	4.86	5.25
		min 1v	0.74	0.78	1.42	1.44	1.97	2.06	2.61	2.62	3.47	3.61
Sensible cooling capacity [kW]	(1)	max	1.3	1.44	2.28	2.41	3.11	3.41	3.84	4.03	5.2	5.63
		med	0.93	0.99	1.65	1.68	2.23	2.35	2.79	2.84	3.83	4.03
		min	0.56	0.57	1.04	1.04	1.47	1.49	1.93	1.91	2.65	2.71
Water flow in cooling [l/h]	(1)	max	277	323	511	549	686	781	857	918	1 094	1 228
		med	205	229	377	392	506	550	636	660	836	903
		min	127	134	244	248	339	354	449	451	597	621
Pressure drop in cooling [kPa]	(1)	max	8.6	14.8	28.9	16.1	19	33	32.6	25.6	25.9	20.8
		med	5	8	17	8.9	11.1	17.8	19.4	14.3	16.1	12.1
		min	2.2	3.2	7.9	4	5.5	8.2	10.5	7.3	8.9	6.3
Heating capacity 2 pipes [kW]	(2)	max	2.13	2.37	3.74	3.91	4.95	5.6	6.09	6.51	8.69	9.39
		med	1.53	1.63	2.7	2.75	3.59	3.87	4.47	4.61	6.41	6.7
		min	0.92	0.94	1.7	1.7	2.35	2.43	3.08	3.09	4.45	4.5
Water flow in heating 2 pipes [l/h] *	(2)	max	277	323	511	549	686	781	857	918	1 094	1 228
		med	205	229	377	392	506	550	636	660	836	903
		min	127	134	244	248	339	354	449	451	597	621
Pressure drop in heating 2 pipes [kPa]	(2)	max	8.3	12.6	23.9	13.5	15.7	26.9	26.8	21	22.5	17
		med	5.0	6.5	13.8	7.2	9.2	14.9	16.1	11.8	13.9	9.9
		min	2.0	2.6	6.6	3	4.5	6.5	8.4	6	7.7	5.2
Heating capacity 4 pipes [kW]	(3)	max	1.63	-	2.74	-	3.68	-	4.63	-	5.98	-
		med	1.23	-	2.11	-	2.8	-	3.56	-	4.62	-
		min	0.81	-	1.47	-	2	-	2.65	-	3.4	-
Water flow in heating 4 pipes [l/h]	(3)	max	140	-	236	-	317	-	398	-	514	-
		med	106	-	181	-	241	-	306	-	397	-
		min	70	-	126	-	172	-	228	-	292	-
Pressure drop in heating 4 pipes [kPa]	(3)	max	4.3	-	13.6	-	4.5	-	7.8	-	12.3	-
		med	2.6	-	8.5	-	2.8	-	4.9	-	7.8	-
		min	1.3	-	4.5	-	1.5	-	2.9	-	4.6	-
Air flow [m3/h]		max	330	325	515	505	735	720	890	875	1 395	1 365
		med	220	210	350	340	495	475	610	585	945	910
		min	120	115	210	200	305	290	400	380	605	575
Sound power level [dB(A)]		max	51	51	51	51	54	54	57	57	64	64
		med	41	41	42	42	44	44	48	48	55	55
		min	30	30	30	30	33	33	37	37	44	44
Sound pressure level [dB(A)]	(4)	max	42	42	42	42	45	45	48	48	55	55
		med	32	32	33	33	35	35	39	39	46	46
		min	21	21	21	21	24	24	28	28	35	35
Power supply [V-ph-Hz]			230 / 1 / 50 + E									
Power input [W]		max	21	21	25	25	32	32	41	41	99	99
Absorbed current [A]		max	0.18	0.18	0.22	0.22	0.28	0.28	0.34	0.34	0.81	0.81
Dimensions **	Height	mm	530	530	530	530	530	530	530	530	530	530
	Width	mm	770	770	985	985	1 200	1 200	1 415	1 415	1 415	1 415
	Depth	mm	225	225	225	225	225	225	225	225	255	255

(1) Room temperature 27°C d.b., 19°C w.b. - Water temperature 7/12 °C
(2) Room temperature 20°C - Water inlet temperature: 50°C - Water flow rate as for the cooling conditions.
(3) Room temperature 20°C - Water inlet temperature: 70/60°C
(4) Sound pressure level in a 100 m² room, at 1,5 m distance and riverberating time of 0,5 s.
** Water flow values as Cooling, accordingly to the EUROVENT standards and UNI ENV 1397 ** Dimensions refer to the units with casing*

Options / Accessories

Compatibility table / Codes

Model	YFCN AC motor + Standard control devices		
Versions	**VC/VCB mod. - Vertical with casing**	**HC mod. - Horizontal with casing**	**CD mod. - Without casing**
Controls for style VC (supplied with separate packaging)			
Three speed control BL (1)	9060130	-	-
Three speed control + electronic thermostat and S/W switch TMV-S (2)	9060140	-	-
Three speed control + electronic thermostat and centralized S/W - TLC (2)	9060133	-	-
Automatic speed control with electronic thermostat and S/W switch ATL (2)	9066139	-	-
Controls for style HC/CD (supplied with separate packaging)			
Remote three speed control JWC-3V (1) (5)	-	9066642	9066642
Remote three speed control + electronic thermostat JWC-T and manual S/W switch (2)	-	9066630K	9066630K
Remote three speed control + electronic thermostat and centralized/manual S/W switch JWC-TQR (2) (4)	-	9066631K	9066631K
Automatic speed control with electronic thermostat and S/W switch - JWC-AU (to be used with JPF-AU and JP-AU only) (2) (4)	-	9066632K	9066632K
Automatic remote control with electronic thermostat, S/W switch and liquid crystall display JTM-B (to be used with JPF-AU and JP-AU only) (2) (4)	-	9066331E	9066331E
Automatic speed control with electronic thermostat to be mounted in the light wall box TMO-503-SV2 (3) (5)	-	9060172	9060172
Electromechanical thermostat T2T (5) (6)	-	9060174	9060174
Power unit JPF-AU for JWC-AU and JTM-B remote controls, fitted on the unit	9066641	9066641	9066641
Power unit JP-AU for JWC-AU and JTM-B remote controls, not fitted on the unit	9066640	9066640	9066640
Controls accessories for all versions (supplied with separate packaging)			
Low temperature cut-out for controls TLC	3021091	3021091	3021091
Low temperature cut-out for controls TMV-S and JWC-T	9053048	9053048	9053048
Low temperature cut-out for controls ATL, JWC-TQR, JWC-AU and JTM-B	3021090	3021090	9053049
T2 sensor to be used as Change-over for controls ATL, JWC-AU and JTM-B	9025310	9025310	9025310
Change-over 15-25 for control TLC and JWC-TQR	9053049	9053049	9053049
Receiving speed selector for centralized control (slave) style VC RECV	9060136	9060136	9060136
Receiving speed selector for centralized control (slave) style HC/CD SEL-CR	9066311	9066311	9066311
Terminal board adaptor kit KIT	9060103	-	-
Controls for style VC + additional electric resistance (supplied with separate packaging)			
Three speed control with electronic thermostat and S/W switch TMV-R-IAQ	9063006	-	-
Automatic speed control with electronic thermostat and S/W switch JWC-AU (2)	9066632K	-	-
Controls for style HC/CD + additional electric resistance (supplied with separate packaging)			
Remote three speed control + electronic thermostat and centralized/manual S/W switch JWC-TQR (3)	-	9066631K	9066631K
Automatic speed control with electronic thermostat and centralized S/W - JWC-AU (3)	-	9066632K	9066632K
Automatic remote control with electronic thermostat, S/W switch and liquid crystall display JTM-B (2)	-	9066331E	9066331E

WARNING
(1) Not to be used with valves and/or low temperature cut-out. (2) It can be used with valves and/or low temperature cut-out. (3) Low temperature cut-out included.
(4) It can be used with Change Over. (5) Not suitable with -E electric heater. (6) Not to be used with low temperature cut-out.

Free wireless control system for all YFCN all versions			
Remote Control FREE-COM	9060572	9060572	9060572
Mounted Electronic Board FREE-UPM	9060571	9060571	9060571
Not Mounted Electronic Board FREE-UPS	9060570	9060570	9060570
Temperature sensor FREE-SEN	9060573	9060573	9060573

Options / Accessories

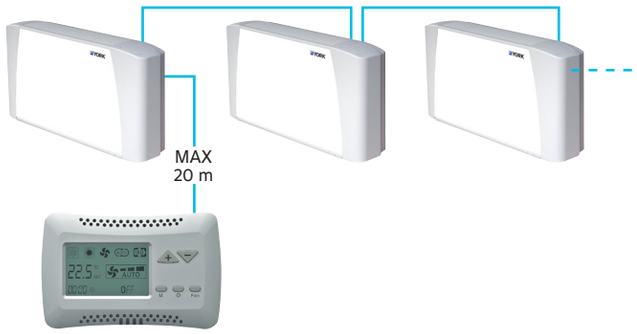
Compatibility table / Codes

Model	YFCN AC motor + MB control devices
Versions	**ALL VERSIONS: VC/VCB - Vertical w. casing + HC - Horizontal with casing + CD without casing** **ALL VERSIONS: VC/VCB + HC + CD with electric heater**
Controls and accessories for all versions	
Mounted power unit MB-M	9066332
Not mounted power unit MB-S	9066333
Wall control JTM-B	9066331E
IR remote control and mounted IR receiver RM-RT03	9066336
IR remote control and not mounted IR receiver RS-RT03	9066337
IR remote control RT03	3021203
Mounted IR receiver RM	9066339
Not mounted IR receiver RS	9066338
Multifunction wall control up to 60 units PSM-DI	3021293
T2 sensor (to be used as Change-over or minimum temp. Sensor)	9025310
Management system for a network of fan coils with MB electronic board	
Hardware/software supervisory system (to be used with MB board only) NET	9079118
Router-S	3021290
Relay output board SIOS	3021292

With T-MB wall control

One control for each unit
(Maximum length of the connection cable = 20 m)

One control for more units (20 units max.)
(Maximum total length of the connection cable = 800 m)



With RT03 Infra-red remote control

One control for each unit

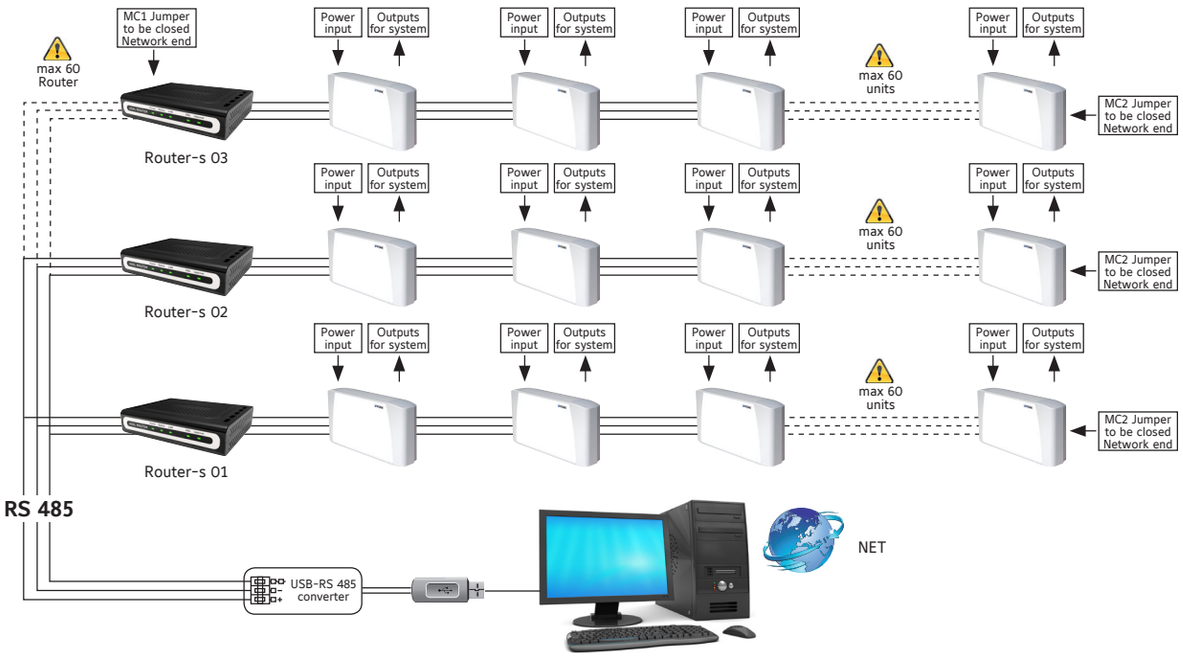
One control for more units (20 units max.)
(Maximum total length of the connection cable = 800 m)

Options / Accessories

Compatibility table / Codes

Model	YFCN ECM motor + Standard control devices		
Versions	**VC/VCB mod. - Vertical with casing**	**HC mod. - Horizontal with casing**	**CD mod. - Without casing**
Controls accessories for all versions (supplied with separate packaging)			
Low temperature cut out NTC for control TMV-T-ECM, WM-S-ECM and JP-AU power unit	3021090		
T2 sensor to be used as Change -over for JP-AU power unit	9025310		
Change over 15-25 CH 15-25 for control TMV-T-ECM	9053049		

Model	YFCN ECM motor + MB control devices		
Versions	**VC/VCB mod. - Vertical with casing**	**HC mod. - Horizontal with casing**	**CD mod. - Without casing**
Controls for style VC (supplied with separate packaging)			
Continuous fan speed control with electronic thermostat and S/W switch TMV-T-ECM	9060141	-	-
Controls for style HC/CD (supplied with separate packaging)			
JWC-AU Automatic speed control with electronic thermostat and centralized S/W switch	-	9066632K	9066632K
JTM-B Automatic remote control with electronic thermostat, S/W switch and liquid crystall display	-	9066331E	9066331E
WM-S-ECM Continuous fan speed control with S/W switch and liquid crystall display	-	9066644	9066644
JPF-AU power unit for JWC-AU and JTM-AU remote controls, fitted on the unit	9066641	9066641	9066641
JP-AU power unit for JWC-AU and JTM-AU remote controls, not fitted on the unit	9066640	9066640	9066640
Accessories of controls for VC, HC-VCB and CD models (supplied with separate packaging)			
MB-ECM-M mounted power unit for ECM fan coil	9066334	9066334	9066334
MB-ECM-S not mounted power unit for ECM fan coil	9066335	9066335	9066335
Wall control JTM-B	9066331E	9066331E	9066331E
IR remote control and mounted IR receiver RM-RT03	9066336	9066336	9066336
IR remote control and not mounted IR receiver RS-RT03	9066337	9066337	9066337
IR remote control RT03	3021203	3021203	3021203
Mounted IR receiver RM	9066339	9066339	9066339
Not mounted IR receiver RS	9066338	9066338	9066338
Multifunction wall control up to 60 units PSM-DI	3021293	3021293	3021293
T2 sensor (to be used as Change-over or minimum temperature Sensor)	9025310	9025310	9025310
Management system for a network of fan coils with MB electronic board			
Hardware / software supervisory system Net	9079118	9079118	9079118
Router S	3021290	3021290	3021290
Relay output board SIOS	3021292	3021292	3021292



Options / Accessories

Compatibility table / Codes

Model	YFCN General accessories								
Sizes	**130/140**	**230/240**	**330/340**	**430/440**	**530/540**	**630/640**	**730/740**	**830/840**	**930/940**
Valves all versions									
3 way double valve kit for 4 tube installation and single coil + kit fitted on the unit	9066572W								
3 way double valve kit for 4 tube installation and single coil + kit not fitted on the unit	9066562W								
Kit 3 way valve mounted	9066561					9060471			
Kit 3 way valve additional battery mounted	9060472								
Kit 3 way valve not mounted	9066560					9060474			
Kit 3 way valve additional battery not mounted	9060475								
Kit 2 way valve primary and/or additional battery mounted	9060476					-			
Kit 2 way valve primary battery mounted	-					9060477			
Kit 2 way valve primary and/or additional battery not mounted	9060478					-			
Kit 2 way valve primary battery not mounted	-					9060479			
2 way DN 10 balance valve for main coil + kit fitted on the unit	9066660			-					
2 way DN 15 balance valve for main coil + kit fitted on the unit	-			9066661				-	
2 way DN 20 balance valve for main coil + kit fitted on the unit	-							9066662	
2 way DN 10 balance valve for additional coil + kit fitted on the unit	9066663					-			
2 way DN 15 balance valve for additional coil + kit fitted on the unit	-					9066664			
2 way DN 10 balance valve for main coil + kit not fitted on the unit	9066650			-					
2 way DN 15 balance valve for main coil + kit not fitted on the unit	-			9066651				-	
2 way DN 20 balance valve for main coil + kit not fitted on the unit	-							9066652	
2 way DN 10 balance valve for additional coil + kit not fitted on the unit	9066653					-			
2 way DN 15 balance valve for additional coil + kit not fitted on the unit	-					9066654			
Valves CD versions only	**130/140**	**230/240**	**330/340**	**430/440**	**530/540**	**630/640**	**730/740**	**830/840**	**930/940**
Semplified 3-way valve kit for CD version fitted	9066571					9060484			
Semplified 3-way valve kit for CD version not fitted	9066570					9060481			
Semplified 3-way valve kit for CD version not fitted - additional battery	9060480								
Electric heater VC/VCB/CH version	**130/140**	**230/240**	**330/340**	**430/440**	**530/540**	**630/640**	**730/740**	**830/840**	**930/940**
El. resistance and relays fitted on the unit (650 W) VC/HC	9066491E	-							
El. resistance and relays fitted on the unit (400 W) VC/HC	-	9066472E	-						
El. resistance and relays fitted on the unit (600 W) VC/HC	-	9066482E	9066473E		-				
El. resistance and relays fitted on the unit (750 W) VC/HC	-				9066475E		-		
El. resistance and relays fitted on the unit (900 W) VC/HC	-		9066483E		-				
El. resistance and relays fitted on the unit (1000 W) VC/HC	-	9066492E	-				9066477E		
El. resistance and relays fitted on the unit (1250 W) VC/HC	-				9066485E		-		
El. resistance and relays fitted on the unit (1500 W) VC/HC	-		9066493E		-		9066487E		
El. resistance and relays fitted on the unit (2000 W) VC/HC	-				9066495E		-		
El. resistance and relays fitted on the unit (2500 W) VC/HC	-						9066497E		
Electric heater CD version	**130/140**	**230/240**	**330/340**	**430/440**	**530/540**	**630/640**	**730/740**	**830/840**	**930/940**
El. resistance and relays fitted on the unit (700 W) CD	9066611	-							
El. resistance and relays fitted on the unit (400 W) CD	-	9066592	-						
El. resistance and relays fitted on the unit (600 W) CD	-	9066602	9066593		-				
El. resistance and relays fitted on the unit (750 W) CD	-				9066595		-		
El. resistance and relays fitted on the unit (900 W) CD	-		9066603		-				
El. resistance and relays fitted on the unit (1000 W) CD	-	9066612	-				9066597		
El. resistance and relays fitted on the unit (1250 W) CD	-				9066605		-		
El. resistance and relays fitted on the unit (1500 W) CD	-		9066613		-		9066607		
El. resistance and relays fitted on the unit (2000 W) CD	-				9066615		-		
El. resistance and relays fitted on the unit (2500 W) CD	-						9066617		

Options / Accessories

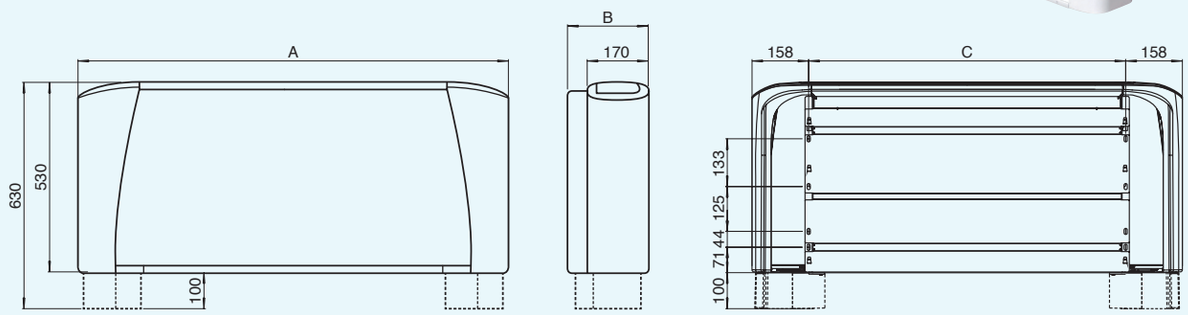
Compatibility table / Codes

Model	YFCN General accessories								
Sizes	**130/140**	**230/240**	**330/340**	**430/440**	**530/540**	**630/640**	**730/740**	**830/840**	**930/940**
Accessories for all versions	**130/140**	**230/240**	**330/340**	**430/440**	**530/540**	**630/640**	**730/740**	**830/840**	**930/940**
Pair feet	9060150							9060151	
Vertical auxiliary condensate tray	6060400								
Horizontal auxiliary condensate tray (left connections)	6060402								
Horizontal auxiliary condensate tray (right connections)	6060403								
Condensate pump for VC - VCB - CD fitted on the unit auxiliary condensate collection tray included (vertical installation)	9066297								
Condensate pump for VC - VCB - CD not fitted on the unit auxiliary condensate collection tray included (vertical installation)	9066296								
Condensate pump for CD fitted on the unit auxiliary condensate collection tray to be ordered separately (horizontal installation)	9066295								
Condensate drain pipe	6060420								
Damper	9066531	9066532	9066533		9066535		9066537	9066538	
Kit breeze	-	9076452	9076453		9076455		-		
Recessed box	-	9076462	9076463		9076465		-		
Rear closing panel VC	9062005	9060180	9060181		9060182		9060183		
Rear closing panel HC	9060187	9060190	9060191		9060192		9060193	9060194	
Frontal air intake CD mounted	9066501	9066502	9066503		9066505		9066507	9066508	
Intake grid for VC	9060229	9060230	9060231		9060232		9060233		
Adaptor for terminal board VC for remote control	9060103								
Accessories only for concealed version CD	**130/140**	**230/240**	**330/340**	**430/440**	**530/540**	**630/640**	**730/740**	**830/840**	**930/940**
Outlet flange 90° FM90	9066381	9066382	9066383		9066385		9066387	9066388	
Inlet flange 90° FR90	9066441	9060710	9060711		9060712		9060713	9060714	
Straight inlet flange FRD	9066451	9060720	9060721		9060722		9060723	9060724	
Straight outlet flange FMD	9066371	9066372	9066373		9066375		9066377	9066378	
Outlet spigot diffuser PMC	9066361	9066362	9066363		9066365		9066367	9066368	
Air outlet grid BMA	9066411	9060750	9060751		9060752		9060753		
Air inlet grid GRAG	9066431	9060764	9060765		9060766		9060767		
Air inlet grid GRAP	9066421	9060760	9060761		9060762		9060763		
Air inlet spigot plenum PRC	9066461	9066462	9066463		9066465		9066467	9066468	
Intake grid with filter (to be used in combination with inlet flange 90°) GRAFP	9066391	9060770	9060771		9060772		9060773		
Intake grid with filter (to be used in combination with straight inlet flange) GRAFG	9066401	9060774	9060775		9060776		9060777		

Dimensions

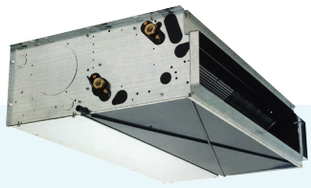
YFCN / YFCN-ECM 130 to 940 (with casing)

VC, VCB and HC models



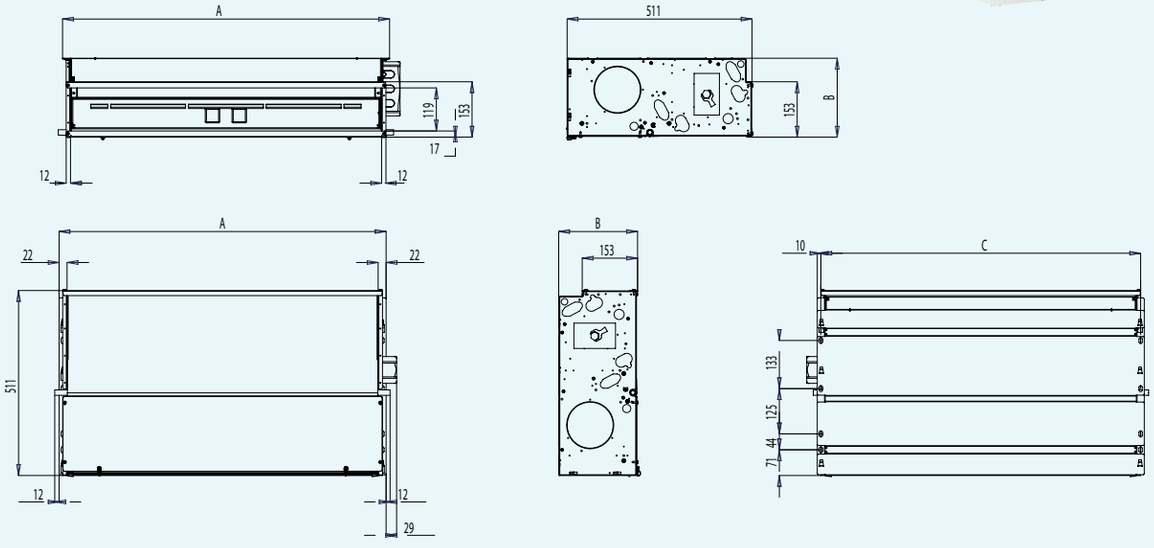
All dimensions in mm. Drawings not a scale.

Model	130 / 140	230 / 240	330 / 340	430 / 440	530 / 540	630 / 640	730 / 740	830 / 840	930 / 940
A	670	770	985	985	1 200	1 200	1 415	1 415	1 415
B	225	225	225	225	225	225	225	255	255
C	354	454	669	669	884	884	1 099	1 099	1 099



YFCN / YFCN-ECM 130 to 940 (without casing)

CD models



All dimensions in mm. Drawings not a scale.

Model	130 / 140	230 / 240	330 / 340	430 / 440	530 / 540	630 / 640	730 / 740	830 / 840	930 / 940
A	374	474	689	689	904	904	1 119	1 119	1 119
B	218	218	218	218	218	218	218	248	248
C	354	454	669	669	884	884	1 099	1 099	1 099

LASER & LOW BODY Fan Coil Units

2 & 4 pipe system

A complete range from 0.7 kW up to 9.95 kW

TUC03 Terminal unit controller
BacNET and N2 Metasys network compatible

CSL00 (Built in)
CSR00 (Wall mounted)
Fan speed selector

CML00 (Built in)
CMR00 (Wall mounted)
Thermostat with manual fan speed and S/W change over

CEL00 (Built in)
CER00 (Wall mounted)
Thermostat with manual fan speed and automatic change over

CEL20 (Built in)
CER20 (Wall mounted)
Thermostat with auto. fan speed and automatic change over

CEL30 (Built in)
CER30 (Wall mounted)
Thermostat with auto. fan speed and automatic change over for modulating valve

LASER fan coil units are simple and elegant, discreet in their design. High standards of quality and reliability, combined with a wide range of accessories ensure a total solution for all comfort cooling and heating requirements.

LOW BODY units are part of the LASER Fan Coils Units family. The reduced height cabinet makes them the ideal solution for new or replacement applications where dimensional limitations apply.

Features

- 6 speed fan
- Cabinet factory fitted
- Valve factory fitted
- Electrical heater factory fitted
- Thermal or modulating valve
- Service valve
- Option front air intake (LASER)
- Optional plenum (LASER)
- ECM inverter option available
- Option for EUROVENT certified unit with District Cooling rated coil

Selection software

LASER & LOW BODY Fan Coil Units

0.7 to 9.95 kW

Technical features

Model			LASER: YLV, YLV-AF, YLH, YLH-AF, YLIV, YLIV-AF, YLIH, YLIH-AF									
Sizes			**110**	**112**	**114**	**216**	**218**	**220**	**222**	**224**	**226**	**328**
Total cooling capacity [kW]	(1)	max	1.16	1.64	2.21	3.36	3.58	4.53	5.19	6.57	7.41	9.95
		med	0.99	1.35	1.92	2.72	3.05	3.75	4.48	5.87	6.81	8.95
		min	0.79	1.1	1.61	2.24	2.5	2.99	3.91	4.7	5.61	6.51
Sensible cooling capacity [kW]	(1)	max	0.98	1.37	1.96	2.52	3.14	3.62	4.54	5.2	5.86	8.27
		med	0.82	1.09	1.68	2.00	2.57	2.91	3.83	4.56	5.32	7.34
		min	0.64	0.86	1.36	1.60	2.04	2.25	3.27	3.53	4.26	5.18
Water flow in cooling [l/h]	(1)	max	201	300	394	596	654	802	958	1167	1306	1657
		med	173	244	345	487	553	687	863	1074	1224	1491
		min	140	197	284	398	452	567	741	842	977	1084
Pressure drop in cooling [kPa]	(1)	max	3.4	7.1	5.8	14.8	13.6	24.1	28.4	18.8	21	34.2
		med	2.8	5	4.6	12.5	9.8	17.4	21.8	15.5	18.1	28.2
		min	2	3.4	3.3	8.5	6.7	11.6	17.2	10.5	12.8	14.1
Heating capacity 2 pipes [kW]	(2)	max	1.57	2.16	3.05	4.11	4.95	5.71	7.19	7.83	9.33	12.96
		med	1.28	1.73	2.43	3.44	4.16	4.65	6.08	6.94	8.51	11.43
		min	1	1.35	2	2.75	3.35	3.61	5.25	5.45	6.86	8.02
Water flow in heating 2 pipes [l/h]	(2)	max	Water flow values as Cooling, accordingly to the EUROVENT standards and UNI ENV 1397									
		med										
		min										
Pressure drop in heating 2 pipes [kPa]	(2)	max	2.7	6.1	4.8	11.9	12.5	20	23.5	15.5	20.5	30.4
		med	2.3	4.7	3.7	8.5	9.1	14.3	18	12.7	17.6	24.9
		min	1.7	3.1	2.8	5.7	6.3	9.5	14.2	8.7	12.4	13.8
Heating capacity 4 pipes [kW]	(3)	max	1.12	1.46	2.25	3.10	3.64	4.92	5.53	6.92	7.18	9.10
		med	1.02	1.31	2.06	2.73	3.19	4.16	4.92	6.3	6.8	8.34
		min	0.79	1.1	1.68	2.29	2.7	3.38	4.36	5.16	5.71	6.60
Water flow in heating 4 pipes [l/h]	(3)	max	100	163	199	307	346	445	499	608	642	756
		med	86	134	176	259	294	382	449	562	604	693
		min	71	110	147	214	241	318	386	448	489	548
Pressure drop in heating 4 pipes [kPa]	(3)	max	2	4.4	8.83	19.3	9.0	13	14.5	40.6	40	58.6
		med	1.6	3.4	7	15.2	7.1	9.7	11.9	28.8	36.4	49.9
		min	1.07	2.4	6.27	11.4	5.0	6.7	9.6	20.3	26.8	31.9
Air flow [m3/h]		max	243	321	436	581	712	871	1081	1254	1481	2068
		med	192	249	358	456	592	699	929	1116	1352	1725
		min	143	194	289	338	474	538	739	798	999	1070
Sound power level [dB(A)]		max	48	50	54	53	55	54	60	60	63	67
		med	42	45	49	47	50	48	56	56	60	63
		min	36	38	42	40	43	41	50	47	53	52
Sound pressure level [dB(A)]	(4)	max	38	40	42	41	43	41	47	45	50	61
		med	33	35	38	36	39	35	42	44	47	57
		min	28	29	32	29	32	29	38	37	41	46
Power supply [V-ph-Hz]			230 / 1 / 50 + E									
Power input [W]		max	46	48	57	61	86	90	117	140	162	213
Absorbed current [A]		max	0.22	0.23	0.27	0.29	0.33	0.38	0.52	0.65	0.65	1.00
Dimensions	Height	mm	538	538	538	538	538	614	614	614	614	614
	Width	mm	648	773	898	1023	1148	1273	1273	1523	1523	1773
	Depth	mm	224	224	224	224	224	254	254	254	254	254

(1) Room temperature 27°C d.b., 19°C w.b. - Water temperature 7/12 °C
(2) Room temperature 20°C - Water inlet temperature: 50°C
(3) Room temperature 20°C - Water inlet temperature: 70/60°C.
(4) Sound pressure level in a 100 m³ room, at 1.5 m distance and riverberating time of 0.3 s.
max = speed 2, med = speed 3 min = speed 5 when using selection software

LASER & LOW BODY Fan Coil Units

0.7 to 9.95 kW

Technical features

Model			LOW BODY: YLVR, YLIVR				
Sizes			**110**	**112**	**114**	**216**	**218**
Total cooling capacity [kW]	(1)	max	0.94	1.46	2.11	2.72	3.37
		med	0.84	1.22	1.77	2.37	2.95
		min	0.69	0.97	1.42	1.95	2.58
Sensible cooling capacity [kW]	(1)	max	0.83	1.19	1.69	2.16	2.64
		med	0.72	0.97	1.38	1.86	2.29
		min	0.57	0.75	1.09	1.5	1.97
Water flow in cooling [l/h]	(1)	max	162	251	364	467	580
		med	145	211	305	409	509
		min	119	168	246	336	444
Pressure drop in cooling [kPa]	(1)	max	2.1	4	12.6	6.9	18.4
		med	1.7	2.9	9.3	5.5	14.6
		min	1.2	1.9	6.3	3.9	11.5
Heating capacity 2 pipes [kW]	(2)	max	1.39	2.01	2.83	3.64	4.43
		med	1.23	1.69	2.32	3.13	3.83
		min	0.98	1.28	1.83	2.52	3.30
Water flow in heating 2 pipes [l/h]	(2)	max	Water flow values as Cooling, accordingly to the EUROVENT standards and UNI ENV 1397				
		med					
		min					
Pressure drop in heating 2 pipes [kPa]	(2)	max	1.7	3.2	4.3	5.6	14.9
		med	1.4	2.4	3	4.4	11.9
		min	1.0	1.6	2	3.1	9.3
Heating capacity 4 pipes [kW]	(3)	max	1.15	1.83	2.43	3.27	3.65
		med	1.02	1.53	2.03	2.85	3.2
		min	0.83	1.22	1.64	2.34	2.8
Water flow in heating 4 pipes [l/h]	(3)	max	101	161	213	286	320
		med	90	134	177	250	280
		min	73	107	144	205	245
Pressure drop in heating 4 pipes [kPa]	(3)	max	2.2	4.6	10.5	18.9	5.7
		med	1.7	3.3	7.6	14.9	4.5
		min	1.2	2.2	5.2	10.5	3.6
Air flow [m3/h]		max	243	321	446	574	691
		med	203	246	343	470	570
		min	149	178	253	356	470
Sound power level [dB(A)]		max	50	51	54	54	56
		med	44	46	49	48	51
		min	37	39	43	41	44
Sound pressure level [dB(A)]	(4)	max	40	41	44	44	46
		med	34	36	39	38	41
		min	27	29	33	31	34
Power supply [V-ph-Hz]			230 / 1 / 50 + E				
Power input [W]		max	46	48	57	81	86
Absorbed current [A]		max	0.22	0.23	0.28	0.39	0.42
Dimensions	Height	mm	430	430	430	430	430
	Width	mm	648	773	898	1023	1148
	Depth	mm	254	254	254	254	224

(1) Room temperature 27°C d.b., 19°C w.b. - Water temperature 7/12 °C
(2) Room temperature 20°C - Water inlet temperature: 50°C
(3) Room temperature 20°C - Water inlet temperature: 70/60°C.
(4) Sound pressure level in a 100 m³ room, at 1.5 m distance and riverberating time of 0.3 s.
max = speed 2, med = speed 3 min = speed 5 when using selection software

Options / Accessories

Compatibility table / Codes

Model		LASER										LOW BODY				
Sizes		**110**	**112**	**114**	**216**	**218**	**220**	**222**	**224**	**226**	**228**	**110**	**112**	**114**	**216**	**218**
With Cabinet																
YLV-YLH	2/3/4 rows	•	•	•	•	•	•	•	•	•	•					
YLV-YLH/AF Front air intake	2/3/4 rows	•	•	•	•	•	•	•	•	•	•					
YLVR	2/3 rows											•	•	•	•	•
Without Cabinet																
YLIV-YLIH	2/3/4 rows	•	•	•	•	•	•	•	•	•	•					
YLIV-YLIH/AF Front air intake	2/3/4 rows	•	•	•	•	•	•	•	•	•	•					
YLIVR	2/3 rows											•	•	•	•	•
Options (Factory fitted)																
Coil and heaters																
1 row heating	BA1	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Kit electrical heater (with relay and safety switch)	KREL	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Built in thermostat																
Fan speed selector	CSL00								•							
Thermostat with manual fan speed and S/W change over	CML00								•							
Thermostat with manual fan speed, dead band, automatic change over	CEL00								•							
Thermostat with automatic fan speed, dead band, automatic change over	CEL20								•							
Thermostat with automatic fan speed, dead band, automatic change over for modulating valve	CEL30								•							
Parallel connection																
For ON/OFF valve one/FCU	CBL20								•							
For modulating valve one/FCU	CBL30								•							
3 way valve factory fitted																
For 2 pipe systems ON/OFF	J3A2 (2p)								•							
For 4 pipe systems ON/OFF	J3A2 (4p)								•							
3 way modulating valve factory fitted																
For 2 pipe systems Modulating	J3AM (2p)								•							
For 4 pipe systems Modulating	J3AM (4p)								•							
Shut off valves factory fitted																
For 2 pipe systems	DT (2p)								•							
For 4 pipe systems	DT (4p)								•							
Condensate pump	PC								•							
WS sensor change over for CEL/CER	WS								•							
Minimum temperature thermostat	TM								•							
Accessories (Supplied loose)																
Remote controllers and thermostat (wall mounted)																
Fan speed selector	CSR00								•							
Thermostat with manual fan speed and S/W change over	CMR00								•							
Thermostat with manual fan speed, dead band, automatic change over	CER00								•							
Thermostat with automatic fan speed, dead band, automatic change over	CER20								•							
Thermostat with automatic fan speed, dead band, automatic change over for modulating valve	CER30								•							
Feet and panel (1)																
Set of painted feet	CP1	•	•	•	•	•	•	•	•	•	•					
Set of painted feet + frontal socle	ZL1	•	•	•	•	•	•	•	•	•	•					
Vertical painted back panel	PPV1	•	•	•	•	•	•	•	•	•	•					
Horizontal painted back panel	PPH1	•	•	•	•	•	•	•	•	•	•					
Plenums and air intake (1)																
Air intake plenum	PA	•	•	•	•	•	•	•	•	•	•					
Air intake plenum with collars	PAS	•	•	•	•	•	•	•	•	•	•					
90° air intake plenum	PA90	•	•	•	•	•	•	•	•	•	•					
Air intake duct fitting	RCA	•	•	•	•	•	•	•	•	•	•					
Air delivery plenum with collars	PM	•	•	•	•	•	•	•	•	•	•					
90° air delivery plenum	PM90	•	•	•	•	•	•	•	•	•	•					

(1) for check compatibility with the models of FCU see compatibility table

Dimensions & Weights

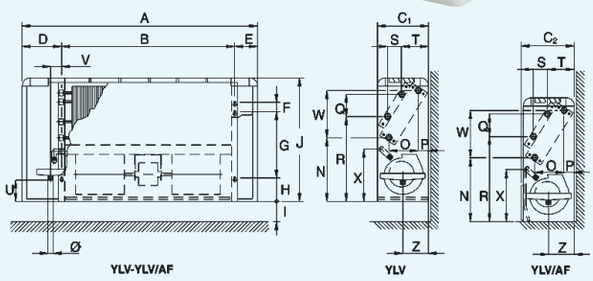
YLV & YLH
- V= vertical
- H= horizontal

YLV-AF & YLH-AF
- AF= front air intake
- V= vertical
- H= horizontal

YLVR
- R= low body
- V= vertical

LASER: YLV - YLV/AF

VERTICAL

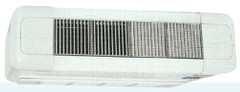


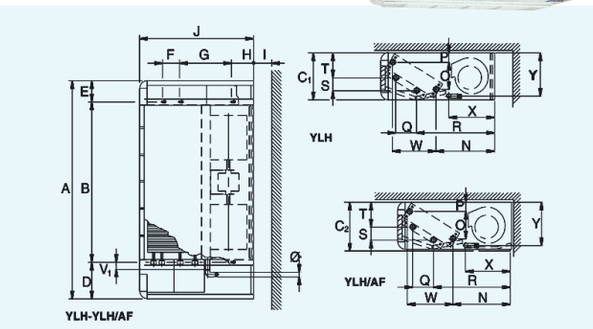
Dim	110	112	114	216	218	220	222	224	226	328
A	648	773	898	1023	1148	1273	1273	1523	1523	1773
B	374	499	624	749	874	999	999	1249	1249	1499
C1	224	224	224	224	224	254	254	254	254	254
C2	233	233	233	233	233	263	263	263	263	263
D	174	174	174	174	174	174	174	174	174	174
E	100	100	100	100	100	100	100	100	100	100
F	40	40	40	40	40	40	40	40	40	40
G	280	280	280	280	280	356	356	356	356	356
H	101	101	101	101	101	101	101	101	101	101
I	85	85	85	85	85	85	85	85	85	85
J	538	538	538	538	538	614	614	614	614	614
N	266	266	266	266	266	299	299	299	299	299
O	113	113	113	113	113	138	138	138	138	138
P	48	48	48	48	48	53	53	53	53	53
Q	87	87	87	87	87	87	87	87	87	87
R	355	355	355	355	355	409	409	409	409	409
S	50	50	50	50	50	50	50	50	50	50
T	117	117	117	117	117	135	135	135	135	135
U	90	90	90	90	90	116	116	116	116	116
V	47	47	47	47	47	47	47	47	47	47
V 1	28	28	28	28	28	28	28	28	28	28
W	195	195	195	195	195	238	238	238	238	238
X	219	219	219	219	219	252	252	252	252	252
Y	205	205	205	205	205	235	235	235	235	235
Z	109	109	109	109	109	122	122	122	122	122
Ø	20	20	20	20	20	20	20	20	20	20
kg1	18	20	23	28	31	41	44	52	52	58
kg2	19	21	24	30	32	43	46	54	54	61

Notes: 1=YLV / YLH - 2=YLV/AF / YLH/AF (All dimensions in mm)

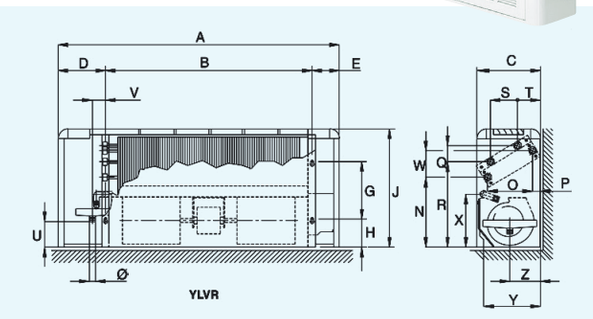
LASER: YLH - YLH/AF

HORIZONTAL





LOW BODY: YLVR



Dim	110	112	114	216	218
A	648	773	898	1023	1148
B	374	499	624	749	874
C	254	254	254	254	254
D	174	174	174	174	174
E	100	100	100	100	100
G	170	170	170	170	170
H	101	101	101	101	101
J	430	430	430	430	430
N	245	245	245	245	245
O	154	154	154	154	154
P	31	31	31	31	31
Q	47	47	47	47	47
R	304	304	304	304	304
S	88	88	88	88	88
T	87	87	87	87	87
U	65	65	65	65	65
V	47	47	47	47	47
W	84	84	84	84	84
X	214	214	214	214	214
Z	109	109	109	109	109
ø	20	20	20	20	20
kg	15	17	22	23	26

(All dimensions in mm)

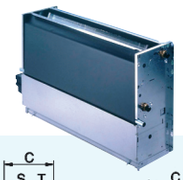
Dimensions & Weights

YLIV & YLIH
- V= vertical
- H= horizontal
- I= without cabinet

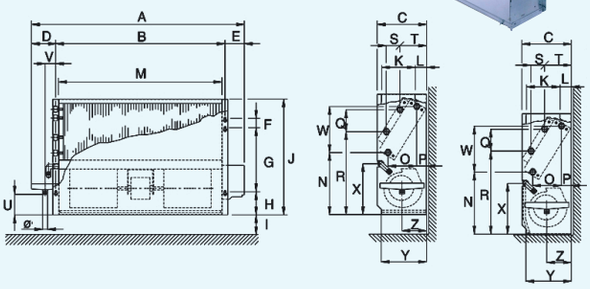
YLIV-AF & YLIH-AF
- AF= front air intake
- V= vertical
- H= horizontal
- I= without cabinet

YLIVR
- R= low body
- V= vertical
- I= without cabinet

LASER: YLIV - YLIV/AF



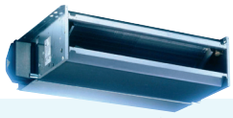
VERTICAL



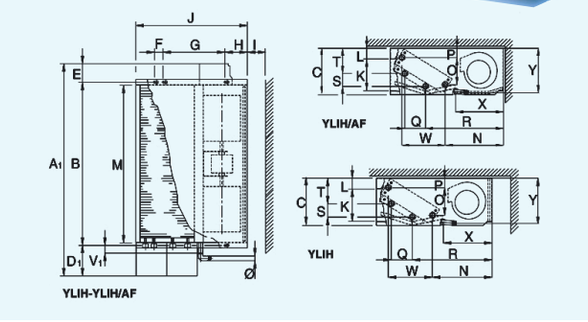
Dim	110	112	114	216	218	220	222	224	226	328
A	555	680	805	930	1055	1180	1180	1430	1430	1680
A 1	574	699	824	949	1074	1199	1199	1449	1449	1699
B	374	499	624	749	874	999	999	1249	1249	1499
C	215	215	215	215	215	245	245	245	245	245
D	109	109	109	109	109	109	109	109	109	109
D 1	128	128	128	128	128	128	128	128	128	128
E	72	72	72	72	72	72	72	72	72	72
F	40	40	40	40	40	40	40	40	40	40
G	280	280	280	280	280	356	356	356	356	356
H	101	101	101	101	101	101	101	101	101	101
I	85	85	85	85	85	85	85	85	85	85
J	505	505	505	505	505	581	581	581	581	581
K	110	110	110	110	110	125	125	125	125	125
L	55	55	55	55	55	60	60	60	60	60
M	349	474	599	724	849	974	974	1224	1224	1474
N	266	266	266	266	266	299	299	299	299	299
O	113	113	113	113	113	138	138	138	138	138
P	48	48	48	48	48	53	53	53	53	53
Q	87	87	87	87	87	87	87	87	87	87
R	355	355	355	355	355	409	409	409	409	409
S	50	50	50	50	50	50	50	50	50	50
T	117	117	117	117	117	135	135	135	135	135
U	90	90	90	90	90	116	116	116	116	116
V	47	47	47	47	47	47	47	47	47	47
V 1	28	28	28	28	28	28	28	28	28	28
W	195	195	195	195	195	238	238	238	238	238
X	219	219	219	219	219	252	252	252	252	252
Y	200	200	200	200	200	230	230	230	230	230
Z	109	109	109	109	109	122	122	122	122	122
Ø	20	20	20	20	20	20	20	20	20	20
kg	10	13	16	19	22	29	31	38	38	42

(All dimensions in mm)

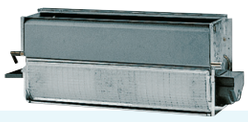
LASER: YLIH - YLIH/AF

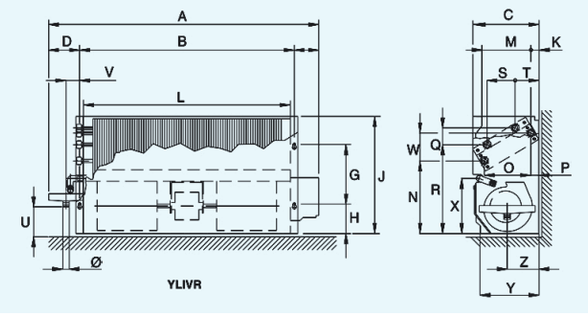


HORIZONTAL



LOW BODY: YLIVR



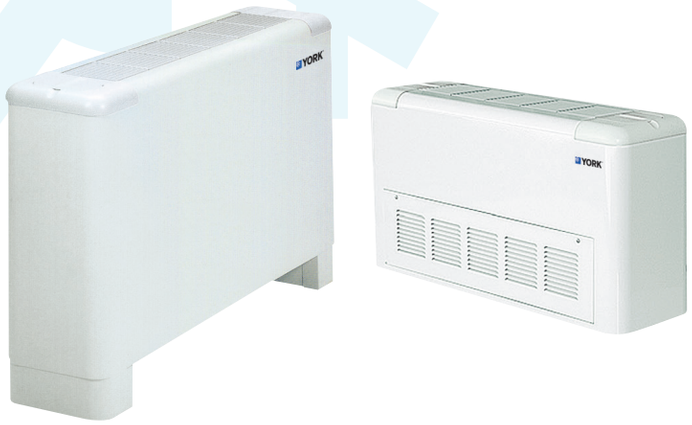


Dim	110	112	114	216	218
A	555	680	805	930	1055
B	374	499	624	749	874
C	230	230	230	230	230
D	108	108	108	108	108
E	73	73	73	73	73
G	170	170	170	170	170
H	101	101	101	101	101
J	395	395	395	395	395
K	61	61	61	61	61
L	349	474	599	724	849
M	127	127	127	127	127
N	245	245	245	245	245
O	154	154	154	154	154
P	31	31	31	31	31
Q	47	47	47	47	47
R	304	304	304	304	304
S	88	88	88	88	88
T	87	87	87	87	87
U	65	65	65	65	65
V	47	47	47	47	47
W	84	84	84	84	84
X	214	214	214	214	214
Y	201	201	201	201	201
Z	109	109	109	109	109
ø	20	20	20	20	20
kg	9	11	14	16	19

(All dimensions in mm)

LASER & LOW BODY Fan Coil Units

Compatibility tables



CSL00 (Built in)
CSR00 (Wall mounted)
Fan speed selector

CEL00 (Built in)
CER00 (Wall mounted)
Thermostat with manual fan speed and automatic change over

CEL20 (Built in)
CER20 (Wall mounted)
Thermostat with auto. fan speed and automatic change over

CML00 (Built in)
CMR00 (Wall mounted)
Thermostat with manual fan speed and S/W change over

CEL30 (Built in)
CER30 (Wall mounted)
Thermostat with auto. fan speed and automatic change over for modulating valve

Features CEL/CER

- Dead band for change over 5°C or 2°C (factory set 2°C)
- Manual fan speeds or automatic (models 20 and 30)
- Thermostated fan control or continuous fan running
- Option water sensor WS for change over on coil (for 2 pipes)
- Led indicated status summer, winter or dead band
- Temperature setting for 7 to 30°C (comfort 20-25°C)
- Plastic pins for limiting temperature range
- Input for window contact
- Input for Economy/ occupancy mode
- Output for remote alarm
- Filter alarm 600 or 1200 running hours (factory set 1200 hours)
- With electrical heater post ventilation
- With Air sensor in the air intake destratification function (CEL only)

Compatibility table Thermostats / Valves / Heaters / Parallel connection / Water sensor / Minimum temperature thermostat

Factory fitted thermostat (built in)		Valves for 2 pipes		Valves for 4 pipes		Heaters	Parallel connection		Water sensor	Min. Temp. Thermostat
							ON/OFF	Modulating		
		J3A2 (2p)	J3AM (2p)	J3A2 (4p)	J3AM (4p)	KREL	CBL20	CBL30	WS	TM
CSL00	Fan speed selector						•			•
CML00	Thermostat with manual fan speed and S/W change over	•		•			•			•
CEL00	Thermostat with manual fan speed, dead band, automatic change over	•		•		•	•		•	•
CEL20	Thermostat with automatic fan speed, dead band, automatic change over	•		•		•	•		•	•
CEL30	Thermostat with automatic fan speed, dead band, automatic change over for modulating valve		•		•			•	•	•
Remote controllers and thermostats (wall mounted)										
CSR00	Fan speed selector						•			•
CMR00	Thermostat with manual fan speed and S/W change over	•		•			•			•
CER00	Thermostat with manual fan speed, dead band, automatic change over	•		•		•	•		•	•
CER20	Thermostat with automatic fan speed, dead band, automatic change over	•		•		•	•		•	•
CER30	Thermostat with automatic fan speed, dead band, automatic change over for modulating valve		•		•			•	•	•

• *Compatible* ☐ *Not compatible*

LASER & LOW BODY Fan Coil Units

Compatibility tables

Compatibility Options / Accessories / Models

		STANDARD								LOW BODY	
		LASER				CONCEALED					
Code	**Designation**	**YLV**	**YLH**	**YLV-AF**	**YLH-AF**	**YLIV**	**YLIH**	**YLIV-AF**	**YLIH-AF**	**YLVR**	**YLIVR**
Coils and heaters**											
BA1**	Additional 1 row heating	•	•	•	•	•	•	•	•	•	•
KREL**	Kit electrical heater with safety thermostat and relay	•	•	•	•	•	•	•	•		
Factory fitted thermostat (built in)											
CSL00	Fan speed selector (buit in)	•		•		•		•		•	•
CML00	Thermostat with manual fan speed and S/W change over	•		•		•		•		•	•
CEL00	Thermostat with manual fan speed, dead band, automatic change over	Compatible with electrical heaters								•	•
CEL20	Thermostat with automatic fan speed, dead band, automatic change over	Compatible with electrical heaters								•	•
CEL30	Thermostat with automatic fan speed, dead band, automatic change over for modulating valves	•		•		•		•		•	•
CBL20	Parallel connection for ON/OFF valve	•	•	•	•	•	•	•	•	•	•
CBL30	Parallel connection for modulating valve	•	•	•	•	•	•	•	•	•	•
Remote controllers and thermostats (wall mounted)											
CSR00	Fan speed selector (wall mounted)	•	•	•	•	•	•	•	•	•	•
CMR00	Thermostat with manual fan speed and S/W change over	•	•	•	•	•	•	•	•	•	•
CER00	Thermostat with manual fan speed, dead band, automatic change over	Compatible with electrical heaters								•	•
CER20	Thermostat with automatic fan speed, dead band, automatic change over	Compatible with electrical heaters								•	•
CER30	Thermostat with automatic fan speed, dead band, automatic change over for modulating valves	•	•	•	•	•	•	•	•	•	•
Valves / Condensate pump / Water sensor / Minimum temperature thermostat (Factory fitted)											
J3A2 (2p)	3-way 4-ports on/off valves for 2-pipe systems	•	•	•	•	•	•	•	•	•	•
J3A2 (4p)	3-way 4-ports on/off valves for 4-pipe systems	•	•	•	•	•	•	•	•	•	•
J3AM (2p)	3-way 4-ports modulating valves for 2-pipe systems	•	•	•	•	•	•	•	•	•	•
J3AM (4p)	3-way 4-ports modulating valves for 4-pipe systems	•	•	•	•	•	•	•	•	•	•
DT (2p)	Shut-off valves for 2-pipe systems (in addition to J3A2/J3AM valves)	•	•	•	•	•	•	•	•	•	•
DT (4p)	Shut-off valves for 4-pipe systems (in addition to J3A2/J3AM valves)	•	•	•	•	•	•	•	•	•	•
PC	Condensate pump	•	•	•	•	•	•	•	•	•	•
WS	Water sensor	Compatible with CEL/CER									
TM	Minimum temperature thermostat	•	•	•	•	•	•	•	•	•	•
Feet and panels											
CP1	Set of painted feet	•				•					
ZL1	Set of feet + frontal socle	•									
PPV1	Vertical painted back panel	•		•						•	
PPH1	Horizontal painted back panel		•		•						
External air intake											
PA	Air intake plenum						•				
PAS	Air intake plenum collars						•				
PA90	90° air intake plenum						•				
RCA	Air intake duct fitting						•				
PM	Air delivery plenum with collars					•	•	•	•		•
PM90	90° air delivery plenum					•	•	•	•		•

• *Compatible*
Compatible with conditions
Not compatible
** *Maximum of rows is indicated in the documentation, the maximum number of rows includes the heating row or electrical heater.*

LASER ECM and LOW BODY ECM

0.6 to 9.35 kW

Technical features

Model			LASER ECM							LOW BODY ECM		
Sizes		(*)	512	514	516	520	522	524	528	112	114	216
Total cooling capacity [kW]	(1)	max ...v	2.01	2.61	3.85	5.10	5.89	7.56	9.35	1.72	2.41	2.98
		med ...v	1.44	1.83	2.54	3.90	4.45	5.68	6.99	1.30	1.89	2.25
		min ...v	0.74	0.94	1.51	2.73	3.06	4.09	4.91	0.62	0.93	1.17
Sensible cooling capacity [kW]	(1)	max	1.68	2.17	3.18	4.17	4.88	6.18	7.68	1.17	1.96	2.44
		med	1.17	1.50	2.02	3.05	3.53	4.45	5.55	1.11	1.54	1.87
		min	0.55	0.78	1.21	2.10	2.35	3.14	3.76	0.47	0.74	0.96
Water flow in cooling [l/h]	(1)	max	334	434	665	847	982	1258	1558	295	396	504
		med	241	306	423	650	743	946	1164	224	324	387
		min	123	156	252	455	509	680	819	106	160	195
Pressure drop in cooling [kPa]	(1)	max	9.5	6.5	14.6	16.9	22.2	16.8	31.3	5.6	14.7	7.8
		med	5.4	3.4	8.5	10.6	13.5	10.0	18.5	3.2	10.2	4.8
		min	1.7	1.1	3.9	5.6	6.8	5.5	9.7	0.9	2.9	1.4
Heating capacity 2 pipes [kW]	(2)	max	2.79	3.69	4.13	6.86	7.97	10.03	12.35	2.06	3.22	3.98
		med	2.02	2.65	4.13	5.24	5.93	7.43	9.13	1.81	2.55	3.08
		min	1.06	1.38	2.22	3.71	4.15	5.39	6.43	0.80	1.20	1.67
Water flow in heating 2 pipes [l/h]	(2)	max	Water flow values as Cooling, accordingly to the EUROVENT standards and UNI ENV 1397									
		med										
		min										
Pressure drop in heating 2 pipes [kPa]	(2)	max	8.0	5.4	12.7	14.6	19.1	14.9	26.9	4.5	12.0	6.4
		med	5.3	3.5	8.7	17.6	18.2	10.7	23.0	2.6	8.3	2.9
		min	1.3	0.9	3.4	4.7	5.7	4.9	8.0	0.7	2.3	1.1
Heating capacity 4 pipes [kW]	(3)	max	2.03	2.73	3.63	5.52	6.17	8.12	8.89	1.81	2.66	3.74
		med	1.59	2.10	2.87	4.52	4.96	6.51	7.14	1.65	2.24	3.00
		min	0.97	1.29	2.21	3.49	3.79	5.11	5.59	0.84	1.20	1.90
Water flow in heating 4 pipes [l/h]	(3)	max	171	228	352	466	518	683	742	159	230	330
		med	134	177	267	383	420	552	603	145	195	253
		min	82	109	189	297	322	434	475	74	105	167
Pressure drop in heating 4 pipes [kPa]	(3)	max	5.6	10.0	20.5	21.1	25.9	45.4	56.9	4.7	11.5	23.0
		med	3.9	6.4	13.6	14.3	17.2	30.3	38.4	3.7	8.8	15.8
		min	1.4	2.6	8.4	8.7	10.2	19.2	24.2	1.1	2.9	6.7
Air flow [m3/h]		max	456	570	792	1082	1197	1567	2034	432	583	710
		med	298	376	487	757	819	1080	1353	286	379	475
		min	138	173	287	504	514	715	875	128	172	223
Sound power level [dB(A)]		max	55	59	57	57	62	63	69	55	57	53
		med	44	48	47	46	51	53	59	45	46	45
		min	25	29	37	35	39	43	48	31	34	33
Sound pressure level [dB(A)]	(4)	max	47	52	51	50	56	56	63	47	50	47
		med	37	42	41	40	45	47	53	38	40	39
		min	22	23	31	28	33	37	42	28	28	27
Power supply [V-ph-Hz]			230 / 1 / 50 + E									
Power input [W]		max	31	47	42	46	76	89	168	32	46	40
Dimensions	Height	mm	623	623	623	699	699	699	699	395	395	395
	Width	mm	773	898	1023	1273	1273	1523	1773	680	805	930
	Depth	mm	224	224	224	254	254	254	254	230	230	230

(1) Room temperature 27°C d.b., 19°C w.b. - Water temperature 7/12 °C
(2) Room temperature 20°C - Water inlet temperature: 50°C
(3) Room temperature 20°C - Water inlet temperature: 70/60°C.
(4) Sound pressure level in a 100 m³ room, at 1.5 m distance and riverberating time of 0.3 s.
(*) 512 - 514 (3v-6v-9v)
(*) 516 (2v-5v-10v)
(*) 520 - 522 - 524 - 528 (3v-6v-10v)

Manufacturer reserves the rights to change specifications without prior notice.

LASER ECM and LOW BODY ECM

Compatibility tables

Compatibility Options / Accessories / Models

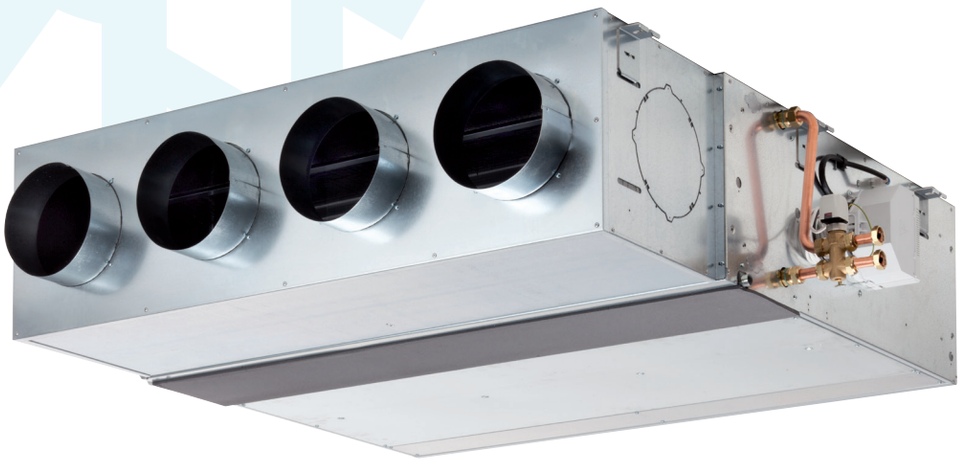
		STANDARD								LOW BODY-ECM	
		LASER-ECM				CONCEALED-ECM					
Code	**Designation**	**YLV**	**YLH**	**YLV-AF**	**YLH-AF**	**YLIV**	**YLIH**	**YLIV-AF**	**YLIH-AF**	**YLVR**	**YLIVR**
Coils and heaters**											
BA1**	Additional 1 row heating	•	•	•	•	•	•	•	•	•	•
KREL**	Kit electrical heater with safety thermostat and relay	•	•	•	•	•	•	•	•		
Factory fitted thermostat (built in)											
EDCL	Microprocessor control for ECM units	•		•		•		•		•	•
OBV11-ODC711	Omnibus control for ECM units + Analogue Plus console	•		•		•		•		•	•
OBV11-ODC211	Omnibus control for ECM units + Display console	•		•		•		•		•	•
Remote controllers and thermostats (wall mounted)											
EDCR	Microprocessor control for ECM units, for wall installation	•	•	•	•	•	•	•	•	•	•
OBV10+ODC716	Omnibus control for ECM units + Remote Analogue Plus console	•	•	•	•	•	•	•	•	•	•
OBV10+ODC216	Omnibus control for ECM units + Remote Display console	•	•	•	•	•	•	•	•	•	•
Valves / Condensate pump / Water sensor / Minimum temperature thermostat (Factory fitted)											
J3A2 (2p)	3-way 4-ports on/off valves for 2-pipe systems	•	•	•	•	•	•	•	•	•	•
J3A2 (4p)	3-way 4-ports on/off valves for 4-pipe systems	•	•	•	•	•	•	•	•	•	•
J3AM (2p)	3-way 4-ports modulating valves for 2-pipe systems	•	•	•	•	•	•	•	•	•	•
J3AM (4p)	3-way 4-ports modulating valves for 4-pipe systems	•	•	•	•	•	•	•	•	•	•
DT (2p)	Shut-off valves for 2-pipe systems (in addition to J3A2/J3AM valves)	•	•	•	•	•	•	•	•	•	•
DT (4p)	Shut-off valves for 4-pipe systems (in addition to J3A2/J3AM valves)	•	•	•	•	•	•	•	•	•	•
PC	Condensate pump	•	•	•	•	•	•	•	•	•	•
WS	Water sensor	Compatible with all the above listed controllers									
Feet and panels											
CP1	Set of painted feet	•				•					
ZL1	Set of feet + frontal socle	•									
PPV1	Vertical painted back panel	•		•						•	
PPH1	Horizontal painted back panel		•		•						
External air intake											
PA	Air intake plenum						•				
PAS	Air intake plenum collars						•				
PA90	90° air intake plenum						•				
RCA	Air intake duct fitting						•				
PM	Air delivery plenum with collars					•	•	•	•		•
PM90	90° air delivery plenum					•	•	•	•		•

• *Compatible*
Compatible with conditions
Not compatible
** *Maximum of rows is indicated in the documentation, the maximum number of rows includes the heating row or electrical heater.*

YEFB Hydro Blower

2 & 4 pipe system

A complete range from 2.8 kW up to 31.5 kW



CSR00 (Wall mounted)
Fan speed selector

CMR00 (Wall mounted)
Thermostat with manual fan speed and S/W change over

CER00 (Wall mounted)
Thermostat with manual fan speed and automatic change over

CER20 (Wall mounted)
Thermostat with auto. fan speed and automatic change over

CER30 (Wall mounted)
Thermostat with auto. fan speed and automatic change over for modulating valve

TUC03 Terminal unit controller
BacNET and N2 Metasys network compatible

YEFB Blower units are available in 6 sizes for horizontal concealed installations: thanks to their high ESP fans that can handle up to 250Pa, they are the ideal solution for air conditioning large spaces.

Selection software

Features

- 6 unit sizes for horizontal mounting
- Handles high external static pressure up to 250Pa
- Choice of 2 or 4 pipe systems
- Twin centrifugal fans
- Horizontal air return
- Air distribution plenum
- Electric heater option
- Optional paint finish
- F5 grade filter option
- 5 Row cooling coil option on sizes 060, 070

YEFB Hydro Blower

2.8 to 31.5 kW

Unit performance at 50 Pa external static pressure, with 4 row cooling coil

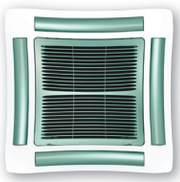
Model YEFB			020-4	030-4	040-4	050-4	060-4	070-4
Total cooling capacity [kW]	(1)	max	7.14	10.12	12.84	15.02	19.92	24.31
		med	5.40	8.29	10.82	13.04	16.31	19.72
		min	3.33	7.00	8.98	11.66	13.53	18.11
Sensible cooling capacity [kW]	(1)	max	5.90	8.62	11.31	13.51	17.17	22.14
		med	4.23	6.53	8.94	11.42	13.67	19.05
		min	2.42	5.27	7.03	7.90	11.08	17.11
Water flow in cooling [l/h]	(1)	max	1 225	1 736	2 204	2 577	3 418	4 171
		med	927	1 422	1 856	2 238	2 799	3 384
		min	571	1 201	1 541	2 000	2 321	3 107
Pressure drop in cooling [kPa]	(1)	max	27.9	35.0	38.3	52.4	19.1	27.6
		med	17.7	24.0	27.9	39.9	13.2	23.4
		min	8.1	17.6	19.6	32.1	9.4	20.1
Heating capacity 2 pipes [kW]	(2)	max	9.93	14.24	18.43	21.47	28.24	36.11
		med	7.40	11.11	15.55	18.51	23.55	33.19
		min	4.01	9.13	12.03	16.24	19.36	31.31
Water flow in heating 2 pipes [l/h]	(2)	max	Water flow values as Cooling, accordingly to the EUROVENT standards and UNI ENV 1397					
		med						
		min						
Pressure drop in heating 2 pipes [kPa]	(2)	max	15.5	31.1	34.7	47.6	17.0	28.2
		med	8.8	21.5	25.2	36.3	11.6	25.1
		min	2.0	15.6	17.9	29.7	8.3	21.1
Heating capacity 2 pipes [kW]	(3)	max	16.78	24.42	31.16	36.33	48.45	62.46
		med	12.49	18.93	26.2	31.24	39.13	56.49
		min	6.75	15.47	20.23	27.39	32.07	53.22
Water flow in heating 2 pipes [l/h]	(3)	max	1 349	2 145	2 467	2 927	3 917	5 392
		med	1 102	1 662	2 059	2 511	3 222	5 092
		min	591	1 359	1 695	2 216	2 638	4 618
Pressure drop in heating 2 pipes [kPa]	(3)	max	17.8	37.1	38.9	55	19.4	34.1
		med	9.9	24.8	27.6	41	13.7	30.3
		min	2.3	17.5	19.2	32.7	9.6	25.3
Air flow [m3/h]		max	1 387	2 160	2 760	3 513	4 118	5 541
		med	928	1 450	2 076	2 746	3 176	4 928
		min	491	1 115	1 545	2 320	2 548	4 340
Sound power level [dB(A)]		max	63.8	65.4	70.1	70.4	76.6	78.4
		med	53.5	59.7	63.0	67.1	69.3	75.6
		min	47.2	54.9	56.4	63.2	64.2	72.9
Sound pressure level [dB(A)]	(4)	max	53.2	54.8	59.5	61.9	66.0	69.1
		med	42.9	49.1	52.4	56.4	58.8	66.4
		min	33.1	44.3	45.8	52.6	53.6	63.8
Power supply [V-ph-Hz]			230 / 1 / 50					
Power input [W]		max	187	392	508	703	1 056	1 794
Absorbed current [A]		max	0.82	1.90	2.24	3.08	4.85	8.05
Dimensions	Height	mm	407.6	407.6	407.6	407.6	517.6	517.6
	Width	mm	902	902	902	902	1 160	1 160
	Depth	mm	989.6	989.6	1 239.6	1 239.6	1 634.6	1 634.6

(1) Room temperature 27°C d.b., 19°C w.b. - Water temperature 7/12 °C
(2) Room temperature 20°C - Water inlet temperature: 50°C
(3) Room temperature 20°C - Water inlet temperature: 70/60°C
(4) Sound pressure level in a 100 m³ room, at 1 m distance and riverberating time of 0.3 s.
4 pipe system not available with 4R coil
4 pipe system not available with 4R heating coil

YHK Hydro Cassette

2 & 4 pipe system

A complete range from 1.3 kW to 11.1 kW



Coloured versions available as an option

YHK Hydro Cassette units are simple and elegant, discreet in their design. High standards of quality and reliability, combined with a wide range of accessories ensure a total solution for all comfort cooling and heating requirements.

Selection software

Wired controls

JWC-3V
Remote three speeds controller

JWC-T
JWC-3V + Electronic thermostat and Summer/Winter switch

JWC-AU
Automatic JWC-T

JTM-B
Digital Automatic Remote controller

TMO 503 SV2
Digital Automatic Remote controller to be mounted in the standard light wall box

Infrared control

TUC03 Terminal unit controller
BacNET and N2 Metasys network compatible

Features

- Cooling duty from 1.3 to 11.1 kW
- 2 & 4 pipes systems in all range
- 2 sizes: 600 x 600 & 800 x 800
- Possible choice between 6 fan speeds
- Condensate pump integrated in all range
- 2/3 way valves fitted or supplied loose in all range
- Coloured versions, possible to change the colour of the grill and the frame
- Possible to select a complete range of controls
- Electric heater fitted as an option for all range (2 pipe only)
- All metal parts insulated to avoid condensations

YHK Hydro Cassette

1.3 to 11.1 kW

Technical features

Model -2 pipes			YHK 20-2	YHK 25-2	YHK 40-2	YHK 50-2	YHK 65-2	YHK 95-2	YHK 110-2
Total cooling capacity 2 Pipes [kW]	(1)	max	2.0	2.7	4.3	5.0	6.2	9.5	11.1
		med	1.6	2.3	3.3	3.9	4.9	6.8	8.5
		min	1.3	1.8	2.3	2.9	4.2	5.3	5.3
Sensible cooling capacity 2 Pipes [kW]	(1)	max	1.6	2.0	3.2	3.7	4.6	6.5	8.3
		med	1.3	1.8	2.4	2.8	3.6	4.5	6.1
		min	1.0	1.4	1.6	2.1	3.0	3.5	3.7
Water flow in cooling 2 Pipes [l/h]	(1)	max	340	461	745	863	1 060	1 636	1 909
		med	280	402	574	667	845	1 166	1 453
		min	219	316	387	506	724	913	913
Pressure drop in cooling 2 Pipes [kPa]	(1)	max	10	9.7	15.1	19.7	21.6	26.9	35.6
		med	7	7.6	9.4	12.4	14.3	14.7	21.8
		min	4.5	4.9	4.6	7.5	10.9	9.4	9.4
Heating capacity 2 pipes [kW]	(2)	max	2.6	3.4	5.2	6.2	7.8	10.71	14.0
		med	2.1	2.9	3.9	4.6	6.0	7.34	10.3
		min	1.6	2.2	2.6	3.4	5.1	5.61	6.1
Water flow in heating 2 pipes [l/h] *	(2)	max	340	461	745	863	1 060	1 636	1 909
		med	280	402	574	667	845	1 166	1 453
		min	219	316	387	506	724	913	913
Pressure drop in heating 2 pipes [kPa]	(2)	max	9	8.2	11.4	17.7	15.1	23	30.6
		med	6	6.3	7.3	11.2	9.9	12.4	18.6
		min	4	4.1	3.5	6.7	6.7	7.9	7.9
Heating capacity 2 pipes [kW]	(3)	max	4.6	5.7	9.3	10.6	13.1	19.8	23.7
		med	3.7	4.9	7	8.3	10.7	13.4	17.3
		min	2.8	4.2	4.9	6.1	8.6	10.3	10.3
Water flow in heating 2 pipes [l/h]	(3)	max	393	488	795	914	1 130	1 699	2 037
		med	315	422	598	709	874	1 155	1 484
		min	240	360	415	524	741	882	882
Pressure drop in heating 2 pipes [kPa]	(3)	max	9.9	8.4	12.5	16	17.5	20.9	28.9
		med	6.5	6.4	7.6	10	11.3	10.6	16
		min	4	4.8	4	5.9	8.4	6.7	6.7

Model -4 pipes			YHK 20-4	YHK 25-4	YHK 40-4	YHK 50-4	YHK 65-4	YHK 95-4	YHK 110-4
Total cooling capacity 4 Pipes [kW]	(1)	max	2.3	2.7	3.3	3.8	6.3	7.7	8.9
		med	2.0	2.4	2.7	3.0	5.0	5.7	6.9
		min	1.5	1.9	1.9	2.4	4.1	4.5	4.5
Sensible cooling capacity 4 Pipes [kW]	(1)	max	1.9	2.0	2.6	3.0	4.7	5.8	6.8
		med	1.6	1.7	2.0	2.3	3.7	4.2	5.2
		min	1.2	1.3	1.3	1.8	3.0	3.3	3.3
Water flow in cooling 4 pipes [l/h]	(1)	max	401	464	574	655	1 090	1 326	1 529
		med	337	406	456	519	865	974	1 192
		min	260	318	318	406	712	777	777
Pressure drop in cooling 4 pipes [kPa]	(1)	max	13.5	8.8	13.4	17	18.9	26.9	34.7
		med	10	6.9	8.8	11.2	12.5	15.4	22.1
		min	6	4.6	4.6	7.2	8.8	10.3	10.3
Heating capacity 4 pipes [kW]	(3)	max	3.0	3.5	4.4	5.0	9.1	11.0	12.7
		med	2.5	3.0	3.5	4.0	7.2	8.1	10.0
		min	2.0	2.4	2.4	3.1	5.9	6.5	6.5
Water flow in heating 4 pipes [l/h]	(3)	max	261	298	378	426	783	946	1 092
		med	219	260	298	341	618	697	858
		min	169	209	209	267	508	555	555
Pressure drop in heating 4 pipes [kPa]	(3)	max	14.5	10.8	16.6	20.5	21.4	29.9	38.8
		med	10.5	8.5	10.8	13.8	14	17.4	25.3
		min	6.5	5.7	5.7	8.8	9.8	11.5	11.5
Air flow [m3/h]		max	610	520	710	880	1140	1500	1 820
		med	420	420	500	610	820	970	1 280
		min	310	310	320	430	630	710	710
Sound power level [dB(A)]		max	49	45	53	59	48	53	58
		med	40	40	45	49	40	40	48
		min	33	33	33	41	33	34	34
Sound pressure level [dB(A)]	(4)	max	40	36	44	50	39	44	49
		med	31	31	36	40	31	31	39
		min	24	24	24	32	24	25	25
Power supply [V-ph-Hz]			230V/1ph/50Hz						
Power input [W]		max	57	44	68	90	77	120	170
Absorbed current [A]		max	0.27	0.20	0.32	0.45	0.36	0.53	0.74
Water content (2 pipes) [l]			8.0	1.4	2.1	2.1	3.0	4.0	4.0
Dimensions	Height	mm	275	275	275	275	303	303	303
	Width	mm	575	575	575	575	820	820	820
	Depth	mm	575	575	575	575	820	820	820

(1) Room temperature 27°C d.b., 19°C w.b. - Water temperature 7/12 °C
(2) Room temperature 20°C - Water inlet temperature: 50°C - Water flow rate as for the cooling conditions.
(3) Room temperature 20°C - Water inlet temperature: 70/60°C
(4) Sound pressure level in a 100 m² room, at 1,5 m distance and riverberating time of 0,3 s.
** Water flow values as Cooling, accordingly to the EUROVENT standards and UNI ENV 1397*

YHK-ECM Inverter Hydro Cassette

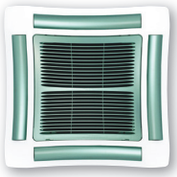
2 & 4 pipe system

A complete range from 1.8 kW to 10.8 kW

Wired control

JTM-B
Wall control with display that allows controlling one or more units in Master/Slave mode. The control is equipped with internal sensor to detect the room temperature, which can be defined as a priority compared to the return air sensor on the fan coil.

Infrared control



Coloured versions available as an option

TUC03 Terminal unit controller
BacNET and N2 Metasys network compatible

YHK ECM water cassette is the result of significant technical and design research focused on providing an avant-garde product in terms of performance, low noise and control flexibility. YHK ECM series uses an innovative brushless electric motor controlled by an inverter card that varies the air flow continuously by means of a 0-10 V signal. The extreme efficiency, also at a low speed, makes it possible to greatly reduce electrical consumption (more than 75% less in comparison to a traditional motor) with absorption values, under normal operating conditions, that are no greater than 10 Watt in the entire range.

Features

- Cooling duty from 1.8 to 10.8 kW
- YHK: models with infrared control (standard)
- YHK-MP: models with wired control (accessory)
- 2 (-2) & 4 (-4 or -6) pipes systems
- 2 sizes: 600 x 600 & 800 x 800
- Condensate pump integrated in all range
- 2/3 way valves fitted or supplied loose in all range
- Coloured versions, possible to change the colour of the grid and the frame
- All metal parts insulated to avoid condensations
- Inverter fan motor for a very quiet operation
- Electrical consumption reduced by up to 75%
- Specific range of controllers with master-slave function

Selection software

YHK-ECM Inverter Hydro Cassette

1.8 to 10.8 kW

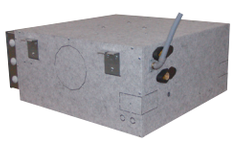
Technical features

Model -2 pipes			YHK-ECM 25-2	YHK-ECM 40-2	YHK-ECM 50-2	YHK-ECM 65-2	YHK-ECM 95-2
Total cooling capacity 2 Pipes [kW]	(1)	max 10v	2.8	4.3	5.0	6.3	10.8
		med 5v	2.2	3.1	3.9	5.2	7.7
		min 1v	1.8	2.2	2.6	4.2	5.3
Sensible cooling capacity 2 Pipes [kW]	(1)	max	2.1	3.2	3.7	4.7	7.9
		med	1.6	2.2	2.8	3.8	5.5
		min	1.4	1.6	1.8	3.0	3.7
Water flow in cooling 2 Pipes [l/h]	(1)	max	473	744	864	1 089	1 848
		med	373	524	666	885	1 328
		min	317	385	441	723	909
Pressure drop in cooling 2 Pipes [kPa]	(1)	max	10.1	15.1	19.7	22.7	33.6
		med	6.6	9.4	12.4	15.6	18.5
		min	4.9	4.6	5.9	10.9	9.4
Heating capacity 2 pipes [kW]	(2)	max	3.4	5.2	6.2	8.0	12.7
		med	2.7	3.6	4.6	6.4	8.8
		min	2.2	2.6	3.0	5.1	5.9
Pressure drop in heating 2 pipes [kPa]	(2)	max	8.7	13.1	17.7	19.5	28.8
		med	5.5	6.6	10.5	12.8	14.9
		min	4.0	3.6	4.7	8.7	7.2

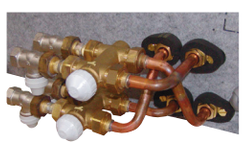
Model -4 pipes			YHK-ECM 25-4	YHK-ECM 40-6	YHK-ECM 50-6	YHK-ECM 65-4	YHK-ECM 95-6
Total cooling capacity 4 Pipes [kW]	(1)	max	2.8	3.9	4.5	6.5	9.9
		med	2.2	2.8	3.5	5.3	7.2
		min	1.9	2.1	2.4	4.3	5.0
Sensible cooling capacity 4 Pipes [kW]	(1)	max	2.1	3.0	3.5	4.8	7.4
		med	1.6	2.0	2.6	3.8	5.2
		min	1.3	1.5	1.7	3.1	3.5
Water flow in cooling 4 pipes [l/h]	(1)	max	476	676	779	1 120	1 697
		med	375	483	608	908	1 233
		min	318	359	409	740	856
Pressure drop in cooling 4 pipes [kPa]	(1)	max	9.5	10.5	13.1	19.8	30.1
		med	6.2	5.7	8.4	13.6	17.0
		min	4.6	3.5	4.1	9.4	8.8
Heating capacity 4 pipes [kW]	(3)	max	3.6	3.4	3.8	9.4	9.5
		med	2.9	2.5	3.1	7.5	7.2
		min	2.4	2.0	2.2	6.1	5.2
Water flow in heating 4 pipes [l/h]	(3)	max	311	288	326	805	818
		med	245	217	263	649	616
		min	209	170	189	528	449
Pressure drop in heating 4 pipes [kPa]	(3)	max	11.7	9.0	11.0	22.5	18.0
		med	7.6	5.5	7.5	15.5	11.0
		min	5.7	3.5	4.5	10.5	6.5
Air flow [m3/h]		max	535	710	880	1 165	1 770
		med	380	445	610	870	1 130
		min	310	310	360	630	710
Sound power level [dB(A)]		max	47	54	60	48	57
		med	39	43	50	39	47
		min	33	33	37	33	34
Sound pressure level [dB(A)]	(4)	max	38	45	51	39	48
		med	30	34	41	30	38
		min	24	24	28	24	25
Power supply [V-ph-Hz]			230V/1ph/50Hz				
Power input [W]		max	16	31	62	33	108
Water content (2 pipes) [l]			1.4	2.1	2.1	3.0	4.0
Absorbed current [A]		max	0.15	0.27	0.52	0.28	0.92
Dimensions	Height	mm	275	275	275	303	303
	Width	mm	575	575	575	820	820
	Depth	mm	575	575	575	820	820

(1) Room temperature 27°C d.b., 19°C w.b. - Water temperature 7/12 °C
(2) Room temperature 20°C - Water inlet temperature: 50°C - Water flow rate as for the cooling conditions.
(3) Room temperature 20°C - Water inlet temperature: 70/60°C
(4) Sound pressure level in a 100 m² room, at 1,5 m distance and riverberating time of 0,3 s.
** Water flow values as Cooling, accordingly to the EUROVENT standards and UNI ENV 1397*

Condensate pump integrated in all sizes



Metal parts insulated to avoid condensation



2 or 3 way valves fitted or supplied loose in all sizes

Outer casing as an option to integrate the water cassette into any enviroment

Compatibility table / Codes

Model with AC motor (without air diffuser)		YHKY 20	YHKY 25	YHKY 40	YHKY 50	YHKY 65	YHKY 95	YHKY 110
Cassette YHKY	2 pipe system	0079100K	0079000K	0079001K	0079002K	0079003K	0079004K	0079005K
	4 pipe system	0079110K	0079010K	0079011K	0079012K	0079013K	0079014K	0079015K
Cassette YHKY-MP (IR remote control and sensor NOT included)	2 pipe system	0079170K	0079171K	0079172K	0079173K	0079174K	0079175K	0079176K
	4 pipe system	0079180K	0079181K	0079182K	0079183K	0079184K	0079185K	0079186K
Cassette YHKY-E - with electric resistance	2 pipe system	-	0079060K	0079061K	0079062K	0079063K	0079064K	0079065K
Cassette YHKY-MP-E - with electric resistance	2 pipe system	-	0079191K	0079192K	0079193K	0079194K	0079195K	0079196K
Cassette YHKY-REB with remote electric board	2 pipe system	0079120K	0079020K	0079021K	0079022K	0079023K	0079024K	0079025K
	4 pipe system	0079130K	0079030K	0079031K	0079032K	0079033K	0079034K	0079035K
Model with ECM motor (without air diffuser)		**-**	**YHKY 25**	**YHKY 40**	**YHKY 50**	**YHKY 65**	**YHKY 95**	**-**
Cassette YHKY-ECM - basic model	2 pipe system	-	0079801K	0079802K	0079803K	0079804K	0079805K	-
	4 pipe system	-	0079811K	0079812K	0079813K	0079814K	0079815K	-
Cassette YHKY-MP- ECM (IR remote control and sensor NOT included)	2 pipe system	-	0079911K	0079912K	0079913K	0079914K	0079915K	-
	4 pipe system	-	0079921K	0079922K	0079923K	0079924K	0079925K	-
Cassette YHKY-ECM-E - with electric resistance	2 pipe system	-	0079841K	0079842K	0079843K	0079844K	0079845K	-
Cassette YHKY-ECM-MP-E - with electric resistance	2 pipe system	-	0079901K	0079902K	0079903K	0079904K	0079905K	-
Mandatory accessories (units cannot work without them)								
Air diffuser - intake grid, frame and louvres in RAL 9003 white colour		AKPA 600				AKPA 800		
Accessories (factory fitted)								
Valves (220V On/Off)								
3 way valve + mounting kit for 2 pipe models (factory fitted)		9079510				9079511		
3 way valve + mounting kit for 4 pipe models (factory fitted)		9079512				9079513		
2 way valve + mounting kit for 2 pipe models (factory fitted)		9079515				9079516		
2 way valve + mounting kit for 4 pipe models (factory fitted)		9079517				9079518		
2 way DN 15 balance valve for main coil + connection kit (fact. fitted) *		9079771				9079791	-	
2 way DN 20 balance valve for main coil + connection kit (fact. fitted) *		-					9079792	
2 way DN 15 balance valve for additional coil + connection kit (fact. fitted) *		9079773				9079793		
Accessories (supplied loose)								
Air diffusers / Panels								
Air diffuser - other colours (*)		Contact Johnson Controls						
Valves (220V On/Off)								
3 way valve + mounting kit for 2 pipe models (not fitted)		9079500				9079501		
3 way valve + mounting kit for 4 pipe models (not fitted)		9079502				9079503		
2 way valve + mounting kit for 2 pipe models (not fitted)		9079505				9079506		
2 way valve + mounting kit for 4 pipe models (not fitted)		9079507				9079508		
2 way DN 15 balance valve for main coil + connection kit (not fitted) *		9079761				9079781	-	
2 way DN 20 balance valve for main coil + connection kit (not fitted) *		-					9079782	
2 way DN 15 balance valve for additional coil + connection kit (not fitted) *		9079763				9079783		
Other type of valves		Contact Johnson Controls						
Other Accessories								
Outer casing OCA 600		9079240				-		
Outer casing OCA 800		-				9079250		
3 way valve + mounting kit for units with outer casing OCA (not fitted)		9079155				9079156		
Fresh air duct FAD		6078005						
Fresh air kit 1 way not suitable for units with outer casing OCA - FAK 600		9079230				-		
Fresh air kit 1 way not suitable for units with outer casing OCA - FAK 800		-				9079231		
FREE wireless control system for YHKY basic model								
Remote Control FREE-COM		9060572						
Power unit fitted FREE-USM		9079107						
Not Mounted Electronic Board FREE-UPS		9060570						
Temperature sensor FREE-SEN		9060573						
Low temperature cut out FREE-NTC		3021090						
CONTROLS for YHKY (AC versions)								
Remote three speed control JWC-3V (1) (5)		9066642				9066642		
Remote three speed control + electronic thermostat and manual S/W switch JWC-T (2)		9066630K				9066630K		
Remote three speed control + electronic thermostat and centralized/ manual S/W switch JWC-TQR (2) (4)		9066632K				9066632K		
Automatic speed control with electronic thermostat and S/W switch - JWC-AU (to be used with JPF-AU and JP-AU only) (2) (4)		9066331E				9066331E		
Automatic speed control with electronic thermostat to be mounted in the light wall box TMO-503-SV2 (3) (5)		9060172				9060172		
Electromechanical thermostat T2T (5) (6)		9060174				9060174		
Power unit JPF-AU for JWC-AU and JTM-B remote controls, fitted on the unit		9066641						
Power unit JP-AU for JWC-AU and JTM-B remote controls, not fitted on the unit		9066640						
Control accessories for all versions (supplied with separate packaging)								
Low temperature cut-out for controls JWC-T		9053048						
Low temperature cut-out for controls JWC-TQR, JWC-AU and JTM-B		3021090						
T2 sensor to be used as Change-over for controls JWC-AU and JTM-B		9025310						
Change-over 15-25 for control JWC-TQR		9053049						
Receiver SEL2M		9079109						

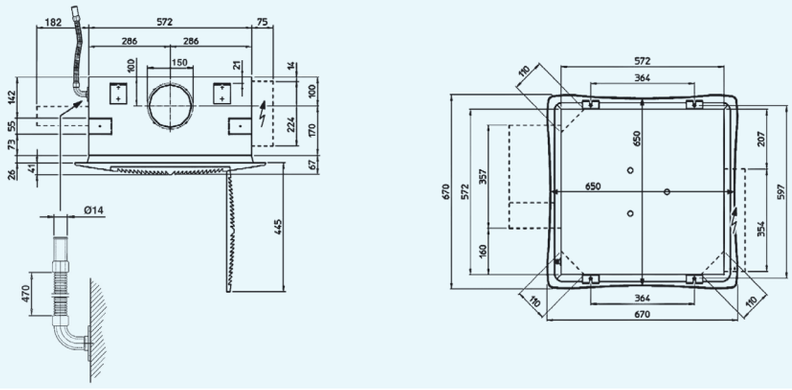
** For 4 pipes unit must consider both the valve for main coil than the valve for additional coil.*
(1) Not to be used with valves and/or low temperature cut-out. (2) It can be used with valves and/or low temperature cut-out. (3) Low temperature cut-out included.
(4) It can be used with Change Over. (5) Not suitable with -E electric heater. (6) Not to be used with low temperature cut-out.

Compatibility table / Codes

CONTROLS for YHKY-MP (AC versions)	YHKY 20	YHKY 25	YHKY 40	YHKY 50	YHKY 65	YHKY 95	YHKY 110
Wall control JTM-B	9066331E						
Wire, receiver and IR remote control kit RCS-RT03	9079117						
Infra red remote control RT-03	3021203						
Wire and receiver kit RCS	9079116						
Receiver for IR remote control for metal grid MD600 RS	9066338				9066338		
Multifunction control PSM-DI	3021293						
T2 sensor (to be used as change over or min.temp. sensor) T2	9025310						
CONTROLS for YHKY-ECM (ECM motor)							
Automatic speed control with electronic thermostat and S/W switch - JWC-AU (to be used with JPF-AU and JP-AU only) (2) (4)	9066632K				9066632K		
Automatic remote control with electronic thermostat, S/W switch and liquid crystall display JTM-B (to be used with JPF-AU and JP-AU only) (2) (4)	9066331E				9066331E		
WM-S-ECM Continuous fan speed control with electronic thermostat, summer/winter switch and LCD display	9066644						
Power unit JPF-AU for JWC-AU and JTM-B remote controls, fitted on the unit	9066641						
Power unit JP-AU for JWC-AU and JTM-B remote controls, not fitted on the unit	9066640						
Control accessories for all versions (supplied with separate packaging)							
Low temperature cut-out for controls JWC-AU and JTM-B	3021090						
T2 sensor to be used as Change-over for controls JWC-AU and JTM-B	9025310						
Change-over 15-25 for control JWC-TQR	9053049						
CONTROLS for YHKY-MP-ECM (ECM motor)							
Wall control JTM-B	9066331E						
Wire, receiver and IR remote control kit RCS-RT03	9079117						
Infra red remote control RT-03	3021203						
Wire and receiver kit RCS	9079116						
Receiver for IR remote control for metal grid MD600 RS	9066338						
Multifunction control PSM-DI	3021293						
T2 sensor (to be used as change over or min.temp. sensor) T2	9025310						
Management system for a network of fan coils with MB electronic board							
Hardware / software supervisory system Net	9079118						
Router S	3021290						
Relay output board SIOS	3021292						

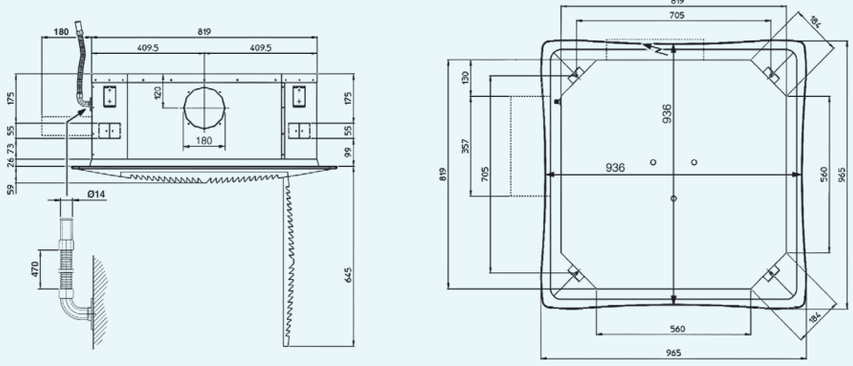
Dimensions

Sizes 20 to 50 (Version 600x600)



All dimensions in mm. Drawings not a scale.

Sizes 65 to 110 (Version 800x800)



All dimensions in mm. Drawings not a scale.

YFCC Coanda Hydro Cassette

2 & 4 pipe system

A complete range from 0.9 kW to 4.0 kW

Wired controls

JWC-3V
Remote three speeds controller

JWC-T
JWC-3V + Electronic thermostat and Summer/Winter switch

JWC-AU
Automatic JWC-T

JTM-B
Digital Automatic Remote controller

TMO 503 SV2
Digital Automatic Remote controller to be mounted in the standard light wall box

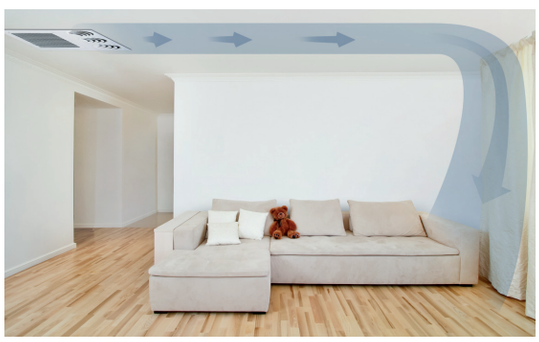
Infrared control

Thanks to its unique diffuser, YFCC cassette units generate an airflow with a “coanda” effect. The unit is suitable for installation in a suspended ceiling. Air intake is from the bottom while the air is supplied parallel to the ceiling.

The resulting “coanda” effect creates excellent draft free distribution of the air inside the room.Units can be supplied with 1 coil (2 pipe system) with optional electric heating element, or with 2 coils (4 pipe system) with one or two rows.

Features

- Coanda effect units, allowing easier and cheaper installation
- Cooling duty from 0.9 to 4.0 kW
- 2 & 4 pipes systems in all range
- 3 sizes: 600 x 600, 600 x 1000 & 600 x 1200
- 2/3 way valves fitted or supplied loose in all range
- Left and right hand (optional) water connections
- 6 fan speeds (3 pre-wired)
- Air throw till 7.6m (cooling) and 9.5m (heating)



Coanda effect

Selection software

YFCC Coanda Hydro Cassette

0.9 to 4.0 kW

Technical features

Model -2 pipes			YFCC 130	YFCC 140	YFCC 230	YFCC 240	YFCC 330	YFCC 340
Total cooling capacity 2 Pipes [kW]	(1)	max	1.5	1.74	2.37	2.57	3.34	4.02
		med	1.06	1.19	1.62	1.72	2.84	3.56
		min	0.88	0.97	1.37	1.44	1.97	2.49
Sensible cooling capacity 2 Pipes [kW]	(1)	max	1.18	1.31	1.77	1.88	2.51	2.98
		med	0.81	0.88	1.19	1.24	2.11	2.63
		min	0.66	0.71	1.0	1.04	1.44	1.81
Pressure drop in cooling 2 Pipes [kPa]	(1)	max	6.1	12.9	7.6	12.1	16.2	15.5
		med	3.3	6.7	3.9	6.0	12.1	12.6
		min	2.4	4.7	2.9	4.4	6.4	6.7
Heating capacity 2 pipes [kW]	(2)	max	1.93	2.1	2.86	3.12	4.02	4.77
		med	1.33	1.42	1.91	2.03	3.37	4.2
		min	1.08	1.1	1.6	1.69	2.3	2.9
Pressure drop in heating 2 pipes [kPa]	(2)	max	4.9	10.7	6.3	10.2	13.4	12.6
		med	2.6	5.4	3.1	4.8	9.8	10.0
		min	1.8	3.7	2.3	3.5	5.2	5.5
Air flow [m3/h]		max	280	280	380	380	540	620
		med	180	180	240	240	440	540
		min	140	140	200	200	290	360
Sound power level [dB(A)]		max	52	52	48	48	52	55
		med	41	41	36	36	46	52
		min	35	35	33	33	35	41
Sound pressure level [dB(A)]	(4)	max	43	43	39	39	43	46
		med	32	32	27	27	37	43
		min	26	26	24	24	26	32
Power supply [V-ph-Hz]			230V/1ph/50Hz					
Power input [W]		max	66	66	71	71	84	84
Absorbed current [A]		max	0.30	0.30	0.32	0.32	0.38	0.38
Dimensions	Height	mm	309	309	309	309	309	309
	Width	mm	592	592	592	592	592	592
	Depth	mm	592	592	970	970	1 192	1 192

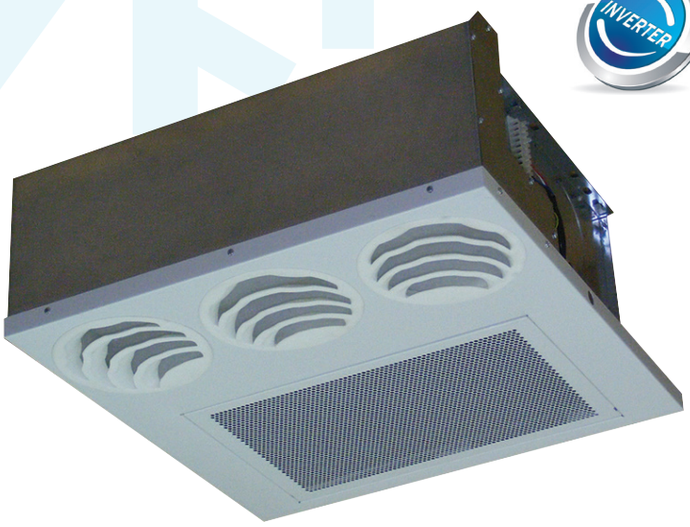
Model -4 pipes			YFCC 130+1	YFCC 230+1	YFCC 330+1
Total cooling capacity 4 Pipes [kW]	(1)	max	1.5	2.37	3.34
		med	1.06	1.62	2.84
		min	0.88	1.37	1.97
Sensible cooling capacity 4 Pipes [kW]	(1)	max	1.18	1.77	2.51
		med	0.81	1.19	2.11
		min	0.66	1.0	1.44
Pressure drop in cooling 4 pipes [kPa]	(1)	max	6.1	7.6	16.2
		med	3.3	3.9	12.1
		min	2.4	2.9	6.4
Heating capacity 4 pipes [kW]	(3)	max	1.47	2.35	3.3
		med	1.08	1.71	2.87
		min	0.92	1.49	2.12
Pressure drop in heating 4 pipes [kPa]	(3)	max	3.6	2.0	4.3
		med	2.1	1.2	3.4
		min	1.6	0.9	2.0
Air flow [m3/h]		max	280	380	540
		med	180	240	440
		min	140	200	290
Sound power level [dB(A)]		max	52	48	52
		med	41	36	46
		min	35	33	35
Sound pressure level [dB(A)]	(4)	max	43	39	43
		med	32	27	37
		min	26	24	26
Power supply [V-ph-Hz]			230V/1ph/50Hz		
Power input [W]		max	66	71	84
Absorbed current [A]		max	0.30	0.32	0.38
Dimensions	Height	mm	309	309	309
	Width	mm	592	592	592
	Depth	mm	592	970	1 192

(1) Room temperature 27°C d.b., 19°C w.b. - Water temperature 7/12 °C
(2) Room temperature 20°C - Water inlet temperature: 50°C - Water flow rate as for the cooling conditions.
(3) Room temperature 20°C - Water inlet temperature: 70/60°C
(4) Sound pressure level in a 100 m² room, at 1,5 m distance and riverberating time of 0,3 s.
** Water flow values as Cooling, accordingly to the EUROVENT standards and UNI ENV 1397*

YFCC-ECM Coanda Hydro Cassette

2 & 4 pipe system

A complete range from 0.8 kW to 4.0 kW



Wired controls

JWC-AU
Automatic remote controller

T-MB
Wall control with display that allows controlling one or more units in Master/Slave mode. The control is equipped with internal sensor to detect the room temperature, which can be defined as a priority compared to the return air sensor on the fan coil.

WM-S-ECM
Continuous fan speed control with electronic thermostat and s/w switch

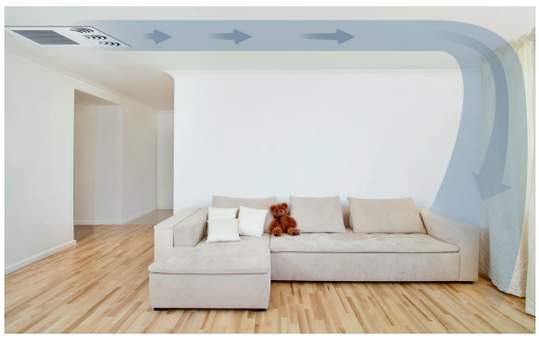
Infrared control

Thanks to its unique diffuser, YFCC cassette units generate an airflow with a “coanda” effect. The unit is suitable for installation in a suspended ceiling. Air intake is from the bottom while the air is supplied parallel to the ceiling.

The resulting “coanda” effect creates excellent draft free distribution of the air inside the room.Units can be supplied with 1 coil (2 pipe system) with optional electric heating element, or with 2 coils (4 pipe system) with one or two rows.

Features

- Coanda effect units, allowing easier and cheaper installation
- Cooling duty from 0.8 to 4.0 kW
- 2 & 4 pipes systems in all range
- 3 sizes: 600 x 600, 600 x 1000 & 600 x 1200
- 2/3 way valves fitted or supplied loose in all range
- Left and right hand (optional) water connections
- 6 fan speeds (3 pre-wired)
- Air throw till 7.6m (cooling) and 9.5m (heating)
- ECM variable speed motor



Coanda effect

Selection software

YFCC-ECM Coanda Hydro Cassette

0.8 to 4.0 kW

Technical features

Model -2 pipes			YFCC-ECM 130	YFCC-ECM 140	YFCC-ECM 230	YFCC-ECM 240	YFCC-ECM 330	YFCC-ECM 340
Total cooling capacity 2 Pipes [kW]	(1)	max 10v	1.56	1.81	3.16	3.5	3.75	4.02
		med 5v	1.18	1.34	2.31	2.51	2.78	2.94
		min 1v	0.82	0.91	1.46	1.55	1.87	1.95
Sensible cooling capacity 2 Pipes [kW]	(1)	max	1.24	1.38	2.41	2.6	2.83	2.98
		med	0.91	0.99	1.73	1.84	2.06	2.15
		min	0.62	0.66	1.07	1.11	1.37	1.41
Pressure drop in cooling 2 Pipes [kPa]	(1)	max	6.5	13.9	12.6	20.8	19.8	15.5
		med	4	8.1	7.3	11.6	11.7	8.9
		min	2.1	4.1	3.2	5	5.8	4.3
Heating capacity 2 pipes [kW]	(2)	max	2.02	2.2	3.85	4.32	4.54	4.78
		med	1.5	1.6	2.79	3.03	3.3	3.44
		min	1.02	1.07	1.72	1.82	2.19	2.25
Pressure drop in heating 2 pipes [kPa]	(2)	max	5.3	11.6	10.4	17.1	16.6	13
		med	3.3	6.6	6	9.4	9.4	7.4
		min	1.7	3.3	2.6	4.1	4.7	3.5
Air flow [m3/h]		max	295	295	540	540	620	620
		med	205	205	370	370	430	430
		min	130	130	215	215	275	275
Sound power level [dB(A)]		max	55	55	56	56	58	58
		med	46	46	46	46	48	48
		min	35	35	34	34	36	36
Sound pressure level [dB(A)]	(4)	max	46	46	47	47	49	49
		med	37	37	37	37	39	39
		min	26	26	25	25	27	27
Power supply [V-ph-Hz]			230V/1ph/50Hz					
Power input [W]		max	29	29	37	37	42	42
Absorbed current [A]		max	0.24	0.24	0.29	0.29	0.35	0.35
Dimensions	Height	mm	309	309	309	309	309	309
	Width	mm	592	592	592	592	592	592
	Depth	mm	592	592	970	970	1 192	1 192

Model -4 pipes			YFCC-ECM 130+1	YFCC-ECM 230+1	YFCC-ECM 330+1
Total cooling capacity 4 Pipes [kW]	(1)	max 10v	1.56	3.16	3.75
		med 5v	1.18	2.31	2.78
		min 1v	0.82	1.46	1.87
Sensible cooling capacity 4 Pipes [kW]	(1)	max	1.24	2.41	2.83
		med	0.91	1.73	2.06
		min	0.62	1.07	1.37
Pressure drop in cooling 4 pipes [kPa]	(1)	max	6.5	12.6	19.8
		med	4	7.3	11.7
		min	2.1	3.2	5.8
Heating capacity 4 pipes [kW]	(3)	max	1.52	3.01	3.64
		med	1.18	2.31	2.82
		min	0.87	1.58	2.04
Pressure drop in heating 4 pipes [kPa]	(3)	max	3.8	3.1	5.1
		med	2.5	2	3.3
		min	1.4	1	1.8
Air flow [m3/h]		max	295	540	620
		med	205	370	430
		min	130	215	275
Sound power level [dB(A)]		max	55	56	58
		med	46	46	48
		min	35	34	36
Sound pressure level [dB(A)]	(4)	max	46	47	49
		med	37	37	39
		min	26	25	27
Power supply [V-ph-Hz]			230V/1ph/50Hz		
Power input [W]		max	29	37	42
Absorbed current [A]		max	0.24	0.29	0.35
Dimensions	Height	mm	309	309	309
	Width	mm	592	592	592
	Depth	mm	592	970	1 192

(1) Room temperature 27°C d.b., 19°C w.b. - Water temperature 7/12 °C
(2) Room temperature 20°C - Water inlet temperature: 50°C - Water flow rate as for the cooling conditions.
(3) Room temperature 20°C - Water inlet temperature: 70/60°C
(4) Sound pressure level in a 100 m² room, at 1,5 m distance and riverberating time of 0,3 s.
** Water flow values as Cooling, accordingly to the EUROVENT standards and UNI ENV 1397*

Options & Accessories YFCC / YFCC-ECM

Compatibility table / Codes

Model with AC motor		YFCC 130	YFCC 140	YFCC 230	YFCC 240	YFCC 330	YFCC 340
Cassette YFCC	2 pipe system	0064001K	0064011K	0064002K	0064012K	0064003K	0064013K
	4 pipe system (+1)	0064021K	0064031K	0064022K	0064032K	0064023K	0064033K
	4 pipe system (+2)	0064041K	-	0064042K	-	0064043K	-
Model with ECM motor							
Cassette YFCC-ECM	2 pipe system	0064201K	0064211K	0064202K	0064212K	0064203K	0064213K
	4 pipe system (+1)	0064221K	0064231K	0064222K	0064232K	0064223K	0064233K
	4 pipe system (+2)	0064241K	-	0064242K	-	0064243K	-
Options (Factory fitted)							
Right hand connection		Contact Johnson Controls					
Valves (220V On/Off) (factory fitted)							
Kit 3 way valve size 1-5 mounted MBVM-JC 1-5 V.220 (YFCC size 1-2)		9066561				-	
Kit 3 way valve size 6-9 mounted MBVM-JC 6-9 V.220 (YFCC size 3)		-				9060471	
Kit 3 way valve additional battery size 1-9 mounted ABVM-JC 1-7 V.220 (YFCC 4 pipes all sizes)		9060472					
Kit 2 way valve size 1-5 and additional battery mounted V2M-JC 1-5 V.220 (YFCC size 1-2)		9060476				-	
Kit 2 way valve size 6-9 primary battery mounted V2M-JC 6-9 V.220 (YFCC size 3)		-				9060477	
Kit 2 way valve all sizes 4 pipes to be used for the additional battery not mounted V2L-JC 1-5 V.220		9060476					
Simplified kit for 3 way valve for CD version fitted (sizes 1-5) VSDM-JC G1-5 V.220 (YFCC size 1-2)		9066571				-	
Simplified kit for 3 way valve for CD version fitted (sizes 6-9) VSDM-JC G6-9 V.220 (YFCC size 3)		-				9060484	
Simplified kit for 3 way valve for CD version fitted - additional battery (all sizes) VSAM-JC G1-9 V.220 (YFCC all sizes)		9060483					
3 way double valve kit for 4 tube installation and single coil + kit fitted on the unit (YFCC all sizes)		9066572W					
2 way DN 10 balance for main coil + kit fitted on the unit (YFCC size 1)		9066660		-			
2 way DN 15 balance for main coil + kit fitted on the unit (YFCC sizes 2-3)		-		9066661			
2 way DN 10 balance for additional coil + kit fitted on the unit (all sizes)		9066663					
Accessories (supplied loose)							
Valves 220V On/Off (supplied loose)							
Kit 3 way valve size 1-5 not mounted MBVL-JC 1-5 V.220 (YFCC size 1-2)		9066560				-	
Kit 3 way valve size 6-9 not mounted MBVL-JC 6-9 V.220 (YFCC size 3)		-				9060474	
Kit 3 way valve additional battery size 1-9 not mounted ABVL-JC 1-7 V.220 (YFCC all sizes)		9060475					
Kit 2 way valve size 1-5 and additional battery not mounted V2L-JC 1-5 V.220 (YFCC size 1-2)		9060478				-	
Kit 2 way valve size 6-9 primary battery not mounted V2L-JC 4-7 V.220 (YFCC size 3)		-				9060479	
Kit 2 way valve size 1-5 and to be used for the additional battery not mounted V2L-JC 1-5 V.220		9060478					
Simplified kit for 3 way valve for CD version not fitted (sizes 1-5) VSDS-JC G1-5 V.220 (YFCC size 1-2)		9066570				-	
Simplified kit for 3 way valve for CD version not fitted (sizes 6-9) VSDS-JC G6-9 V.220 (YFCC size 3)		-				9060481	
Simplified kit for 3 way valve for CD version not fitted - additional battery (all sizes) VSAS-JC G1-9 V.220 (YFCC all sizes)		9060480					
3 way double valve kit for 4 tube installation and single coil + kit not fitted on the unit (YFCC all sizes)		9066562W					
2 way DN 10 balance for main coil + kit not fitted (YFCC size 1)		9066650		-			
2 way DN 15 balance for main coil + kit not fitted (YFCC sizes 2-3)		-		9066651			
2 way DN 10 balance for additional coil + kit not fitted (all sizes)		9066653					
Other type of valves		Contact Johnson Controls					
Accessories							
Electrical heater and relays fitted on the unit - 350 W - size 1 - BEL-CCN 1/4 (note 1)		9064051		-		-	
Electrical heater and relays fitted on the unit - 550 W - size 1 - BEL-CCN 1/6 (note 1)		9064031		-		-	
Electrical heater and relays fitted on the unit - 700 W - size 2 - BEL-CCN 2/7 (note 1)		-		9064052		-	
Electrical heater and relays fitted on the unit - 1150 W - size 1 - BEL-CCN 2/12 (note 1)		-		9064032		-	
Electrical heater and relays fitted on the unit - 900 W - size 3 - BEL-CCN 3/9 (note 1)		-		-		9064053	
Electrical heater and relays fitted on the unit - 1400 W - size 1 - BEL-CCN 3/14 (note 1)		-		-		9064033	
Horizontal auxiliary condensate tray HC ACTH-SX (for units with LEFT hydraulic connectons		6060402					
Horizontal auxiliary condensate tray HC ACTH-DX (for units with RIGHT hydraulic connections)		6060403					
Condensate drain pipe SCR		6060420					
Drain condensate pump not fitted PCC-S		9064010					
Drain condensate pump fitted PCC-M		9064011					
Fresh air spigot 100dia - FCR 100		6064191					
Fresh air spigot 120dia - FCR 120		6064192					

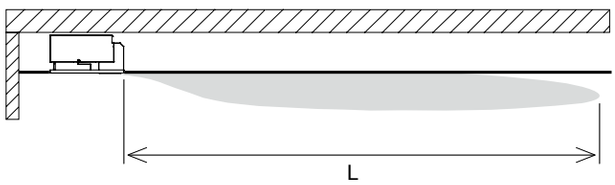
Compatibility table / Codes

CONTROLS for YFCC (AC versions)	YFCC 130	YFCC 140	YFCC 230	YFCC 240	YFCC 330	YFCC 340
Remote three speed control JWC-3V (1) (5)	9066642					
Remote three speed control + electronic thermostat and manual S/W switch JWC-T (2)	9066330K					
Remote three speed control + electronic thermostat and centralized/ manual S/W switch JWC-TQR (2) (4)	9066632K					
Automatic speed control with electronic thermostat and S/W switch - JWC-AU (to be used with JPF-AU and JP-AU only) (2) (4)	9066331E					
Automatic speed control with electronic thermostat to be mounted in the light wall box TMO-503-SV2 (3) (5)	9060172					
Electromechanical thermostat T2T (5) (6)	9060174					
Power unit JPF-AU for JWC-AU and JTM-B remote controls, fitted on the unit	9066641					
Power unit JP-AU for JWC-AU and JTM-B remote controls, not fitted on the unit	9066640					
Control accessories for all versions (supplied with separate packaging)						
Low temperature cut-out for control JWC-T	9053048					
Low temperature cut-out for controls JWC-TQR, JWC-AU and JTM-B	3021090					
T2 sensor to be used as Change-over for controls JWC-AU and JTM-B	9025310					
Change-over 15-25 for control JWC-TQR	9053049					
Receiver SEL2M	9079109					
CONTROLS for YFCC (AC versions) + MB						
Mounted power unit MB-M	9066332					
Not mounted power unit MB-S	9066333					
IR remote control and not mounted IR receiver RS-RT03	9066337					
Not mounted IR receiver RS	9066338					
IR remote control RT03	3021203					
Wall control JTM-B	9066331E					
Multifunction control PSM-DI	3021293					
T2 sensor (to be used as change over or min.temp. sensor) T2	9025310					
CONTROLS for YFCC-ECM						
Automatic speed control with electronic thermostat and S/W switch - JWC-AU (to be used with JPF-AU and JP-AU only) (2) (4)	9066632K					
Automatic remote control with electronic thermostat, S/W switch and liquid crystall display JTM-B (to be used with JPF-AU and JP-AU only) (2) (4)	9066331E					
WM-S-ECM Continuous fan speed control with electronic thermostat, summer/winter switch and LCD display	9066644					
Power unit JPF-AU for JWC-AU and JTM-B remote controls, fitted on the unit	9066641					
Power unit JP-AU for JWC-AU and JTM-B remote controls, not fitted on the unit	9066640					
CONTROLS for YFCC-ECM + MB						
Mounted power unit MB-M	9066332					
Not mounted power unit MB-S	9066333					
IR remote control and not mounted IR receiver RS-RT03	9066337					
Not mounted IR receiver RS	9066338					
IR remote control RT03	3021203					
Wall control JTM-B	9066331E					
Multifunction control PSM-DI	3021293					
T2 sensor (to be used as change over or min.temp. sensor) T2	9025310					
Management system for a network of fan coils with MB electronic board (std. Motor and EC motor)						
Hardware / software supervisory system Net	9079118					
Router S	3021290					
Relay output board SIOS	3021292					
FREE wireless control system for YHKY basic model (AC motor)						
Remote Control FREE-COM	9060572					
Mounted Electronic Board FREE-UPM	9060571					
Not Mounted Electronic Board FREE-UPS	9060570					
Temperature sensor FREE-SEN	9060573					
Low temperature cut out FREE-NTC	3021090					

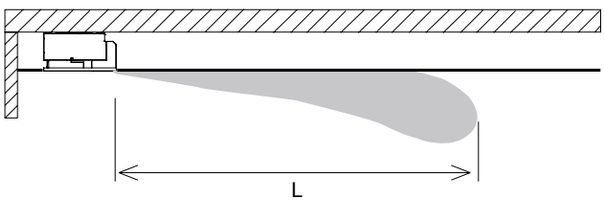
WARNING
(1) Not to be used with valves and/or low temperature cut-out. (2) It can be used with valves and/or low temperature cut-out. (3) Low temperature cut-out included.
(4) It can be used with Change Over. (5) Not suitable with -E electric heater. (6) Not to be used with low temperature cut-out.
Note 1. Electric heaters must be factory supplied only - in ECM range the above controls can control the electric heater only if there is no hot water supply to the exchanger.

Air Throw

C1 - Heating



C2 - Cooling



Model		YFCC 1						YFCC 2						YFCC 3					
		1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6
Air throw L (m)	C1	3.8	4.5	5.8	6.3	6.8	7.2	4	5	6.1	7	8	9	4.5	5.2	6.3	7.5	8.8	9.5
	C2	3	3.6	4.6	5	5.4	5.7	3.2	4	4.8	5.6	6.4	7.2	3.6	4.1	5	6	7	7.6

YHVP & YHVP-ECM Hydro High Wall

2 pipe system

A range from 1.17 to 3.81 kW

JWC-T. Wired Control
Remote three speeds controller, electronic thermostat and Summer/Winter switch

JWC-AU. Wired Control
Automatic JWC-T

Electronic Infrared Control

TUC03 Terminal unit controller
BacNET and N2 Metasys network compatible

Features

- Available with standard AC motors or low energy EC motors
- Wired control or infrared control
- Automatic air sweep (-T and –MB variants only)
- Choice of 2 or 3 way valves fitted
- Condensate collection tray
- Air filter included
- Heat exchange coil

2 Way Valve ON/OFF
with thermoelectric actuator.
Suitable for the connection with Ø 12 mm pipes

Wired control (YHVP)

- 4 operation modes (Cool/Heat/Auto/Fan)
- Room temperature and setting
- Fan speed selector (Auto, low, medium and high)

Infrared control (YHVP-T)

- Wireless
- 5 operation modes (Cool/Heat/Auto/Dry/Fan)
- Sleep Mode
- Room Temperature setting
- Fan speed selection
- Timer
- Air flow direction setting
- LCD display

Note: model shown is –T variant with automatic air sweep function

YHVP & YHVP-ECM Hydro High Wall

1.17 to 3.81 kW

Technical features

Model			YHVP 1	YHVP 2	YHVP 3	YHVP 4
Total cooling capacity [kW]	(1)	max	1.87	2.18	3.03	3.81
		med	1.5	1.84	2.32	3.26
		min	1.24	1.43	1.89	2.62
Sensible cooling capacity [kW]	(1)	max	1.46	1.75	2.27	2.98
		med	1.14	1.43	1.69	2.47
		min	0.92	1.07	1.35	1.93
Heating capacity [kW]	(2)	max	2.58	3.09	3.86	5.07
		med	2	2.39	2.84	4.20
		min	1.6	1.88	2.26	3.26
Air flow [m3/h]		max	375	480	545	790
		med	270	365	375	610
		min	205	250	280	440
Sound power level [dB(A)]		max	48	53	48	57
		med	41	47	40	51
		min	35	39	35	43
Sound pressure level [dB(A)]	(3)	max	39	44	39	48
		med	32	38	31	42
		min	26	30	26	34
Power supply [V-ph-Hz]			230V/1ph/50Hz			
Power input [W]		max	30	32	46	48
Absorbed current [A]		max	0.16	0.16	0.23	0.23
Dimensions	Height	mm	322	322	322	322
	Width	mm	880	880	1 185	1 185
	Depth	mm	212	212	212	212

(1) Room temperature 27°C d.b., 19°C w.b. - Water temperature 7/12 °C
(2) Room temperature 20°C - Water inlet temperature: 50°C - Water flow rate as for the cooling conditions.
(3) Sound pressure level in a 100 m² room, at 1,5 m distance and riverberating time of 0,3 s.
** Water flow values as Cooling, accordingly to the EUROVENT standards and UNI ENV 1397*

Technical features

Model			YHVP-ECM 1	YHVP-ECM 2	YHVP-ECM 3	YHVP-ECM 4
Total cooling capacity [kW]	(1)	max 10v	2.00	2.26	3.29	3.75
		med 5v	1.58	1.87	2.53	3.05
		min 1v	1.17	1.47	1.83	2.34
Sensible cooling capacity [kW]	(1)	max	1.57	1.83	2.50	2.92
		med	1.20	1.46	1.86	2.29
		min	0.86	1.10	1.31	1.70
Heating capacity [kW]	(2)	max	2.78	3.23	4.25	4.99
		med	2.12	2.58	3.15	3.88
		min	1.50	1.94	2.20	2.87
Air flow [m3/h]		max	415	510	620	770
		med	290	375	420	550
		min	190	260	270	375
Sound power level [dB(A)]		max	52	55	53	57
		med	46	47	45	49
		min	37	40	37	43
Sound pressure level [dB(A)]	(3)	max	43	46	44	48
		med	37	38	36	40
		min	28	31	28	34
Power supply [V-ph-Hz]			230V/1ph/50Hz			
Power input [W]		max	15	21	20	30
Absorbed current [A]		max	0.14	0.19	0.18	0.26
Dimensions	Height	mm	322	322	322	322
	Width	mm	880	880	1 185	1 185
	Depth	mm	212	212	212	212

(1) Room temperature 27°C d.b., 19°C w.b. - Water temperature 7/12 °C
(2) Room temperature 20°C - Water inlet temperature: 50°C - Water flow rate as for the cooling conditions.
(3) Sound pressure level in a 100 m² room, at 1,5 m distance and riverberating time of 0,3 s.
** Water flow values as Cooling, accordingly to the EUROVENT standards and UNI ENV 1397*

Options & Accessories

Codes high wall fan coil units YHVP

Unit without IR control without valve	**YHVP 1**	**YHVP 2**	**YHVP 3**	**YHVP 4**
Unit codes	0025001K	0025002K	0025003K	0025004K
Unit without IR control with 2 way valve	**YHVP-2V 1**	**YHVP-2V 2**	**YHVP-2V 3**	**YHVP-2V 4**
Unit codes	0025101K	0025102K	0025103K	0025104K
Unit without IR control with 3 way valve	**YHVP-3V 1**	**YHVP-3V 2**	**YHVP-3V 3**	**YHVP-3V 4**
Unit codes	0025201K	0025202K	0025203K	0025204K
Unit with IR control without valve	**YHVP-T 1**	**YHVP-T 2**	**YHVP-T 3**	**YHVP-T 4**
Unit codes	0025021K	0025022K	0025023K	0025024K
Unit with IR control with 2 way valve	**YHVP-T-2V 1**	**YHVP-T-2V 2**	**YHVP-T-2V 3**	**YHVP-T-2V 4**
Unit codes	0025121K	0025122K	0025123K	0025124K
Unit with IR control with 3 way valve	**YHVP-T-3V 1**	**YHVP-T-3V 2**	**YHVP-T-3V 3**	**YHVP-T-3V 4**
Unit codes	0025221K	0025222K	0025223K	0025224K
Unit with MB board without valve	**YHVP-MB 1**	**YHVP-MB 2**	**YHVP-MB 3**	**YHVP-MB 4**
Unit codes	0025011K	0025012K	0025013K	0025014K
Unit with MB board with 2 way valve	**YHVP-MB-2V 1**	**YHVP-MB-2V 2**	**YHVP-MB-2V 3**	**YHVP-MB-2V 4**
Unit codes	0025111K	0025112K	0025113K	0025114K
Unit with MB board with 3 way valve	**YHVP-MB-3V 1**	**YHVP-MB-3V 2**	**YHVP-MB-3V 3**	**YHVP-MB-3V 4**
Unit codes	0025211K	0025212K	0025213K	0025214K
Unit without IR control without valve with electrical coil	**YHVP-E 1**	**YHVP-E 2**	**YHVP-E 3**	**YHVP-E 4**
Unit codes	0025031K	0025032K	0025033K	0025034K
Unit without IR control with 2 way valve with electrical coil	**YHVP-E-2V 1**	**YHVP-E-2V 2**	**YHVP-E-2V 3**	**YHVP-E-2V 4**
Unit codes	0025131K	0025132K	0025133K	0025134K
Unit without IR control with 3 way valve with electrical coil	**YHVP-E-3V 1**	**YHVP-E-3V 2**	**YHVP-E-3V 3**	**YHVP-E-3V 4**
Unit codes	0025231K	0025232K	0025233K	0025234K
Unit with IR control without valve with electrical coil	**YHVP-T-E 1**	**YHVP-T-E 2**	**YHVP-T-E 3**	**YHVP-T-E 4**
Unit codes	0025041K	0025042K	0025043K	0025044K
Unit with IR control with 2 way valve with electrical coil	**YHVP-T-E-2V 1**	**YHVP-T-E-2V 2**	**YHVP-T-E-2V 3**	**YHVP-T-E-2V 4**
Unit codes	0025141K	0025142K	0025143K	0025144K
Unit with IR control with 3 way valve with electrical coil	**YHVP-T-E-3V 1**	**YHVP-T-E-3V 2**	**YHVP-T-E-3V 3**	**YHVP-T-E-3V 4**
Unit codes	0025241K	0025242K	0025243K	0025244K
Unit with MB board without valve with electrical coil	**YHVP-MB-E 1**	**YHVP-MB-E 2**	**YHVP-MB-E 3**	**YHVP-MB-E 4**
Unit codes	0025051K	0025052K	0025053K	0025054K
Unit with MB board with 2 way valve with electrical coil	**YHVP-MB-E-2V 1**	**YHVP-MB-E-2V 2**	**YHVP-MB-E-2V 3**	**YHVP-MB-E-2V 4**
Unit codes	0025151K	0025152K	0025153K	0025154K
Unit with MB board with 3 way valve with electrical coil	**YHVP-MB-E-3V 1**	**YHVP-MB-E-3V 2**	**YHVP-MB-E-3V 3**	**YHVP-MB-E-3V 4**
Unit codes	0025251K	0025252K	0025253K	0025254K

Controls

JWM-3V Wall control	9066642
JWC-T Wall control	9066630K
JWC-TQR Wall control	9066631K
TMO-503-SV2 Wall control	9060172
T2T Wall control	9060174
JTM-B Wall control (to be used with MB board only)	9066331E
RT03 infra-red remote control with receiver supplied with separate packaging (to be used with MB board only)	9025301
RT03 infra-red remote control supplied with separate packaging (to be used with MB board only)	3021203
Receiver for RT03 infra-red remote control supplied with separate packaging (to be used with MB board only)	9025300
PSM-DI Multifunction control (to be used with MB board only)	3021293
SEL-CVP Speed switch for controls: JWC-T, JWC-TQR and TMO-503-SV2.	9025302
Electronic control accessories	
NTC low temperature cut-out thermostat for control JWC-TQR	3021090
TMM low temperature cut-out thermostat for control JWC-T	9053048
Change-Over CH 15-25 for control JWC-TQR	9053049
T2 Sensor (to be used as change-over or low temperature cut-out - for MB only	9025310

Options & Accessories

Codes high wall fan coil units YHVP-ECM

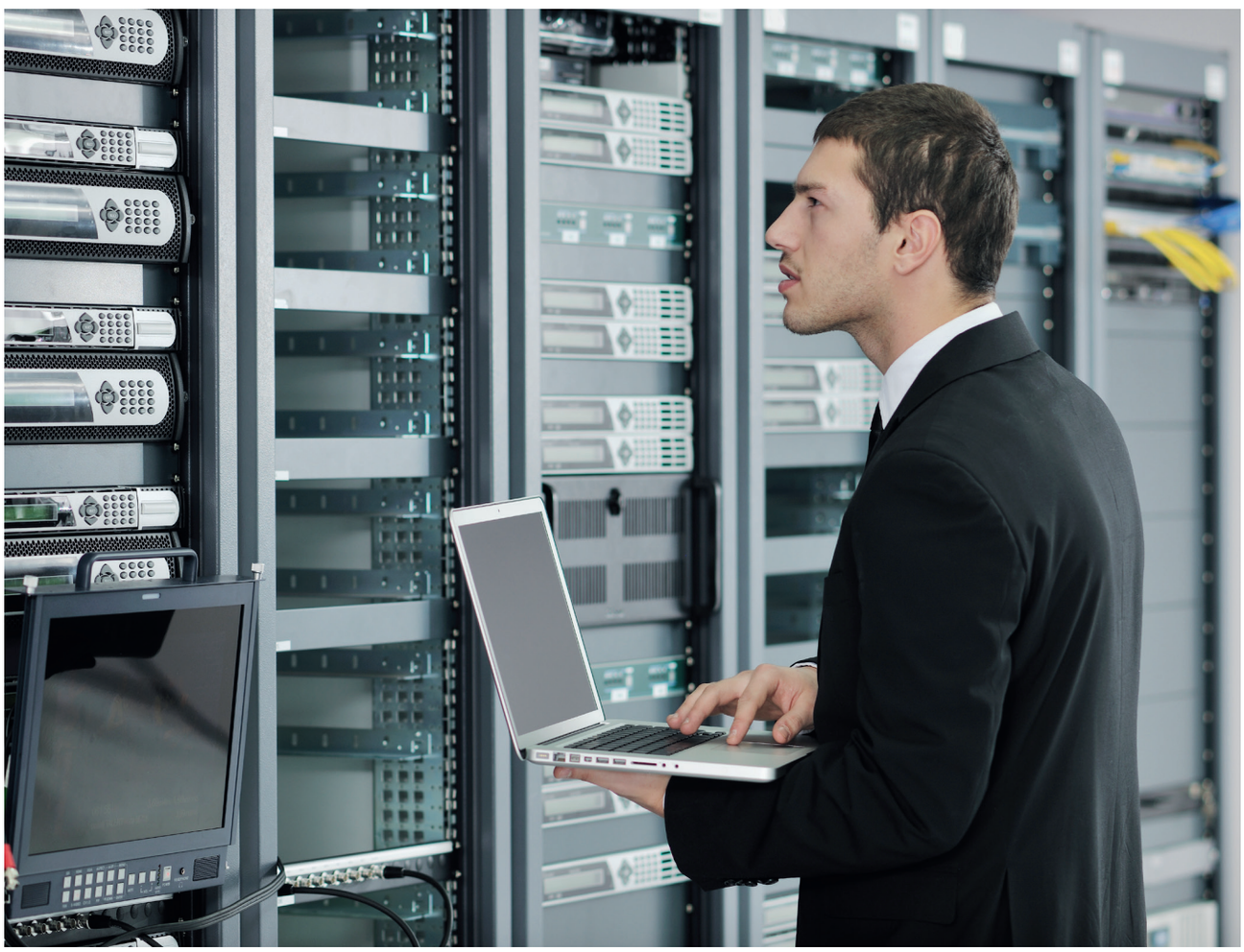
Unit without IR control without valve	**YHVP-ECM 1**	**YHVP-ECM 2**	**YHVP-ECM 3**	**YHVP-ECM 4**
Unit codes	0025501K	0025502K	0025503K	0025504K
Unit without IR control with 2 way valve	**YHVP-ECM-2V 1**	**YHVP-ECM-2V 2**	**YHVP-ECM-2V 3**	**YHVP-ECM-2V 4**
Unit codes	0025601K	0025602K	0025603K	0025604K
Unit without IR control with 3 way valve	**YHVP-ECM-3V 1**	**YHVP-ECM-3V 2**	**YHVP-ECM-3V 3**	**YHVP-ECM-3V 4**
Unit codes	0025701K	0025702K	0025703K	0025704K
Unit with IR control without valve	**YHVP-ECM-T 1**	**YHVP-ECM-T 2**	**YHVP-ECM-T 3**	**YHVP-ECM-T 4**
Unit codes	0025521K	0025522K	0025523K	0025524K
Unit with IR control with 2 way valve	**YHVP-ECM-T-2V 1**	**YHVP-ECM-T-2V 2**	**YHVP-ECM-T-2V 3**	**YHVP-ECM-T-2V 4**
Unit codes	0025621K	0025622K	0025623K	0025624K
Unit with IR control with 3 way valve	**YHVP-ECM-T-3V 1**	**YHVP-ECM-T-3V 2**	**YHVP-ECM-T-3V 3**	**YHVP-ECM-T-3V 4**
Unit codes	0025721K	0025722K	0025723K	0025724K
Unit with MB board without valve	**YHVP-ECM-MB 1**	**YHVP-ECM-MB 2**	**YHVP-ECM-MB 3**	**YHVP-ECM-MB 4**
Unit codes	0025511K	0025512K	0025513K	0025514K
Unit with MB board with 2 way valve	**YHVP-ECM-MB-2V 1**	**YHVP-ECM-MB-2V 2**	**YHVP-ECM-MB-2V 3**	**YHVP-ECM-MB-2V 4**
Unit codes	0025611K	0025612K	0025613K	0025614K
Unit with MB board with 3 way valve	**YHVP-ECM-MB-3V 1**	**YHVP-ECM-MB-3V 2**	**YHVP-ECM-MB-3V 3**	**YHVP-ECM-MB-3V 4**
Unit codes	0025711K	0025712K	0025713K	0025714K
Unit without IR control without valve with electrical coil	**YHVP-ECM-E 1**	**YHVP-ECM-E 2**	**YHVP-ECM-E 3**	**YHVP-ECM-E 4**
Unit codes	0025531K	0025532K	0025533K	0025534K
Unit without IR control with 2 way valve with electrical coil	**YHVP-ECM-E-2V 1**	**YHVP-ECM-E-2V 2**	**YHVP-ECM-E-2V 3**	**YHVP-ECM-E-2V 4**
Unit codes	0025631K	0025632K	0025633K	0025634K
Unit without IR control with 3 way valve with electrical coil	**YHVP-ECM-E-3V 1**	**YHVP-ECM-E-3V 2**	**YHVP-ECM-E-3V 3**	**YHVP-ECM-E-3V 4**
Unit codes	0025731K	0025732K	0025733K	0025734K
Unit with IR control without valve with electrical coil	**YHVP-ECM-T-E 1**	**YHVP-ECM-T-E 2**	**YHVP-ECM-T-E 3**	**YHVP-ECM-T-E 4**
Unit codes	0025541K	0025542K	0025543K	0025544K
Unit with IR control with 2 way valve with electrical coil	**YHVP-ECM-T-E-2V 1**	**YHVP-ECM-T-E-2V 2**	**YHVP-ECM-T-E-2V 3**	**YHVP-ECM-T-E-2V 4**
Unit codes	0025641K	0025642K	0025643K	0025644K
Unit with IR control with 3 way valve with electrical coil	**YHVP-ECM-T-E-3V 1**	**YHVP-ECM-T-E-3V 2**	**YHVP-ECM-T-E-3V 3**	**YHVP-ECM-T-E-3V 4**
Unit codes	0025741K	0025742K	0025743K	0025744K
Unit with MB board without valve with electrical coil	**YHVP-ECM-MB-E 1**	**YHVP-ECM-MB-E 2**	**YHVP-ECM-MB-E 3**	**YHVP-ECM-MB-E 4**
Unit codes	0025551K	0025552K	0025553K	0025554K
Unit with MB board with 2 way valve with electrical coil	**YHVP-ECM-MB-E-2V 1**	**YHVP-ECM-MB-E-2V 2**	**YHVP-ECM-MB-E-2V 3**	**YHVP-ECM-MB-E-2V 4**
Unit codes	0025651K	0025652K	0025653K	0025654K
Unit with MB board with 3 way valve with electrical coil	**YHVP-ECM-MB-E-3V 1**	**YHVP-ECM-MB-E-3V 2**	**YHVP-ECM-MB-E-3V 3**	**YHVP-ECM-MB-E-3V 4**
Unit codes	0025751K	0025752K	0025753K	0025754K

Controls

JTM-B Wall control (to be used with MB board only)	9066331E
RT03 infra-red remote control with receiver supplied with separate packaging (to be used with MB board only)	9025301
RT03 infra-red remote control supplied with separate packaging (to be used with MB board only)	3021203
Receiver for RT03 infra-red remote control supplied with separate packaging (to be used with MB board only)	9025300
PSM-DI Multifunction control (to be used with MB board only)	3021293
SEL-CVP Speed switch for controls: JWC-T, JWC-TQR and TMO-503-SV2.	9025302
Electronic control accessories	
T2 Sensor (to be used as change-over or low temperature cut-out - for MB only	9025310

YORK® Close Control units

Maintaining a constant temperature, purity and humidity of air is essential for ensuring a stable environment for critical electronic and computer equipment, this is why there is the need for close control air conditioning. Unlike comfort air conditioning, close control systems must operate constantly 24/7 requiring high reliability and minimal power consumption. Johnson Controls knows that no two close control requirements are the same, this is why the YORK® range of custom close control units offers quiet, compact and energy efficient equipment that can be configured to needed requirements.



An extensive offering

- cooling capacities of **up to 160kw (chilled water) or 94kw (direct expansion)** with optional free cooling models. Up flow or down flow configuration, either as self-contained packaged units or suitable for connection to remote condensers, are also available
- **optional direct expansion units** fitted with scroll compressors, which have much lower noise and energy consumption than reciprocating compressors
- **R410a** refrigerant units available
- optional **Free Cooling coil** to reduce energy consumption required through use of mechanical cooling
- plug fan with **Electronically Commuted 'EC' fans** option, to allow fully modulating control of airflow
- **low component face velocities**, for a lower total pressure drop and reduced energy consumption
- **minimised dimensions**, enabling one of the market's greatest ratios between sensible cooling capacity and base foot print

YORK® YC-P Series
Close Control Air Conditioners

A complete range from 7.7 kW up to 160 kW

High energy efficiency and minimum environmental impact

"P" Series air conditioners for close control applications are specialised machines with design and operating features which clearly differentiate them from standard air conditioning units.

The **"P" Series** air conditioners offer very high energy efficiency values in all operating conditions which translates into less CO_2 emissions and particularly low running costs. Though optimised for use in data centers and telephone exchanges, they are equally valid in special applications such as measurement laboratories, TV recording studios, museums, control rooms for electricity power stations and railway junctions and other areas where there are prevalent sensible thermal loads and crowding is negligible.

Their application is also ideal in widely varied industrial sectors: optics, electronics, electromedical equipment, electronic equipment production, musical instrument production etc.

Optimal efficiency

Johnson Controls' **"P" Series** design offers the highest sensible cooling capacity with the minimum footprint possible, which translates into optimal ratio levels of cooling capacity to footprint area. This is an important feature in reducing the space needed by machinery, allowing more room in the space for IT equipment. This advantage is especially important given the progressive increases in capacity required by data centers and other computer applications which, over time, need the addition of extra air conditioners.

Clean efficiency is also ensured by the use of the R-410A refrigerant, respectful to the ozone layer.

"P" Series units are also available in configurations 'PG' for perimeter installation, or 'PR' for in row installation in large data centres.

Features and performance

Brushless DC compressors with inverter technology

- Adapting cooling capacity to the real requirements of the plant is one of the principal conditions of guaranteeing the flexibility required by the most advanced systems. By incorporating **BRUSHLESS DC INVERTER** technology into the compressors it is possible to maximize the performance of the motor, especially at partial loads, the control of which is integrated in the microprocessor.
- The cooling coils of the downflow units (**YC-UP**), both in chilled water and direct expansion versions, have aluminium fins with a hydrophylic treatment that alleviates the risk of condensation and the coil face being covered with water, which would compromise the thermal performance and therefore the air conditioning capacity.
- The use of the environmentally friendly refrigerant HFC R410A does not contribute to the depletion of the ozone layer (R134a available on request).
- Thanks to its larger surface area, the filter on the coil allows lower face velocity, which results in lower pressure drop.
- The lower energy consumption of these air conditioners, at the same efficiency, results in a much reduced TEWI (Total Equivalent Warming Impact). The application of EC plug fans reduces both energy consumption and noise levels.

Downflow unit with 2 fans and side compartment; full front access for both fans (covered) and technical compartment

Downflow unit with 2 fans and side compartment; full front access for both fans (not covered) and technical compartment on the side. No side maintanance space is required for accessing components

Microprocessor regulation

The Standard digital microprocessor

- allows management of all typical air-conditioning functions: cooling, heating, humidification, dehumidification and filtering
- ensures a regular and optimised operation as to both performance and consumption, providing as well alarm management and self-diagnosis
- in case of need to install any component requiring analogue control (modulating valve or electronic hot-gas by-pass valve), an optional modulating controller, with semigraphic display, shall be installed in lieu of standard. This alternative controller is also installed as standard microprocessor on special versions such as "Free cooling", "Two Sources"and "Fresh air" units.

Local network management or remote control

YORK® YC-P Series air conditioners are capable of standalone operation, local private network with multiple units (up to 12) or fully integrated with Metasys® Building Management System from Johnson Controls.

In local network applications, one machine is the master, and the remaining slaves follow the same algorithm. The slave units are rotated at predetermined intervals and switch to the master role to balance the number of working hours of the compressors.

In remote applications, the machines can be controlled from remote positions interfacing with common Building Management Protocols such as BacNET, LON and Modbus, either via GSM Modem or TCP/IP Internet Protocol.

For total integration with Johnson Control Metasys® Building Management Systems (BMS) the units can be equipped with an RS485 card working with BacNET MS/TP protocol.

Cooling circuit

The air conditioners with direct expansion coil have a frigorific circuit equipped with: scroll compressor with all necessary protective devices, high pressure (manual reset) and low pressure (automatic reset) switches, thermal expansion valve, dehydrating filter with refrigerant sight glass.

YC-OPA, **YC-UPA** models for pairing with remote condensers, are already equipped with a pressurisation nitrogen charge. The refrigerant charge, and the oil top-up (if required), shall be made by the installer on site.

YC-OPA and **YC-UPA** air conditioners in self-contained packaged format with built-in water-cooled condensers (accessory), are supplied with full refrigerant and oil charge.

Electronic expansion valve (*)

Electronic expansion valves are one of the most recent pieces of equipment that enable us to improve the energy efficiency at partial loads of direct expansion machines. These valves are installed at the inlet of the evaporator, substituting the traditional thermostatic expansion ones: this allows more precise control of the quantity of refrigerant entering the evaporator, and guarantees good capacity regulation, typically between 100% and 50%. Electronic expansion valves also allows control of the amount of overheated gas at the outlet of the evaporator, thus allowing a significant reduction of the condensation pressure during winter or night-time operation whilst maintaining the evaporation pressure unchanged. Adoption of the electronic expansion valve (optional) guarantees a significant increase of the EER values.

One or two completely independent compressors

Models with "1" as the last digit of the unit model number have a single circuit and a single compressor. Those with "2" as the last digit on the other hand have two completely independent refrigerant circuits and two compressors.

The circuits are fitted with all the safety and regulation devices necessary for efficient and reliable operation.

The evaporator coil can be single or double circuit depending on the number of compressors.

Hydraulic circuit

Air conditioners with chilled water coil, **YC-OPU** and **YC-UPU**, include a finned coil and a three-way throttling motorised valve for water flow regulation. The hydraulic circuit is provided with copper tubes with anti-condensate insulation. The coils are optimised for both water with a temperature of 7/12 and for higher ones such as 15/20.

The standard throttling valve (3 points) allows good modulation of the cooling capacity as a function of the environmental conditions, especially with constant thermal loads.

Modulating regulation of the cooling capacity (**)

If a very precise regulation and high response speed are required, a modulating valve (optional) can be installed in lieu of the throttling one. The installation of this valve is recommended in case of functionment with a lot of fresh air. However, the modulating valve needs an analogue signal, not digital, so the installation of the optional modulating controller is necessary.

(*) units equipped with frigorific circuit
(**) units equipped with chilled water coil

Control Panel

All the units are equipped with a complete control panel with main isolator switch. Magnetothermic switches, contactors, and all necessary protection is provided, as required by legal codes and standards.

The control panel of the units equipped with compressors ("A" as third letter of the identification code) has as standard a phase sequencer, which prevents the compressor from getting damaged when counter running. Also, the control panel has two spare terminals for remote indication of a cumulative alarm, as well as two terminals for starting up and stopping the unit from remote position.

The control panel does not include the fan speed controller(s) for the fans of the air cooled remote condensers (winter control). This device is included as standard in the CEA and CEA/LN air cooled condensers from Johnson Controls.

Should you decide to match the unit with a condenser from another manufacturer, the controller(s) can be ordered as accessory.

Modulating controller display and keypad

Large surface filters

The units are equipped with self-extinguishing media class G4 filters. The filters are installed inclined before the cooling coil in order to offer a larger surface and allow lower air crossing speeds, with lower energy consumption.

A 450 mm high duct (accessory) can be installed for holding a F7 class filter, vertically on supply air discharge.

Design suitable to civil environments

YORK® YC-P Series air conditioners have a pleasant and functional design, suitable for installation in civil environments. Their structure consists of aluminium profiles and closing panels hinged on them. Both panels and profiles are coated with a dark grey PVC layer (anthracites), thermoacoustically insulated by polyurethane layer, and further coated with an anti scratch plastic film.

Two versions are available for up flow units (**YC-OP**): front grille & top air discharge (standard), or blind front panel, suction from the bottom and top discharge (optional).

Fan section

New generation of electronic fans

The ever-growing necessity to save energy has made the use of high-performance EC Plug Fans indispensable in reducing plant costs. The fans installed in **YC-P** close control air conditioners are fitted with **BRUSHLESS EC** (Electronically Commutated) **MOTORS** and a composite-material impeller to maximize performance.

Important advantages obtained as a result include:

- Power drawn by the fans is reduced by over 25% compared to fans using traditional AC technology.
- Power drawn by the fans is reduced by about 15% compared to the previous generation of EC fans.
- Noise levels are reduced by over 5 dB(A) at partial loads.
- Risk to the plant is reduced as the mechanical parts are subjected to less use.

Thanks to integration with the microprocessor, the EC fans can be controlled to:

- Reduce rotation speed and therefore air quantity as the cooling capacity requirement decreases, thus making possible a 50% energy saving, operating at partial loads, compared to a constant velocity system.
- Maintain constant air quantity controlled in real time by differential pressure sensors, optimal control if F7 filters are installed.
- Maintain constant air pressure in the raised floor or in the compartmented areas in order to optimize air distribution avoiding hot spots and guarantee maximum modularity of the plant plant.

Regulation Options

Johnson Controls provides four different alternatives for the regulation of the airflow of the EC fans depending on the requirements of the installation:

1. Constant fan rotation speed. The available high static pressure is ideal for most applications. The effective air flow depends on the real pressure drop of the aeraulic system of the installation, however it can be calculated through Johnson Controls computerised selection program.
2. Constant airflow independent of the pressure drop of the filters. In order to maintain a constant airflow, an internal sensor guides the microprocessor management system to vary the airflow handled by the fan, depending on the degree of clogging of the filters. This ensures that insufficient cooling does not occur due to reduced airflow arising from dirty filters.
3. Variable airflow depending on the cooling capacity required by the installation. This is the classic VAV (Variable Air Volume) plant arrangement which responds to increased demand by a proportionate increase in airflow and vice versa. This type of plant offers interesting energy advantages at partial loads, which occur extensively throughout the year, especially at night.
4. Airflow as a function of pressure in the raised floor. This regulation alternative is envisaged for plants with raised floors where the air is distributed under the floor itself. The microprocessor management system maintains constant under-floor pressure. In particular, in very large areas subdivided into multiple local zones with partition dampers driven by individual thermostats, constant regulation of the pressure is necessary to avoid imbalances in the distribution of the air.

Special versions

“Water to air free cooling”: using renewable energy sources

YC-OPW.../FC, YC-UPW.../FC air conditioners are equipped with a “Free cooling” system consisting of an additional chilled-water cooling coil integrated in the aluminium fins of the unit’s direct expansion one, with a three-way modulating valve controlled by the modulating controller. As long as the outside conditions allow the water to respond totally or partially to the cooling request, the controller cuts out or minimises the compressors’ intervention, so reducing substantially the energy consumption.

The water cooled condensers of the frigorific circuit are equipped with a pressostatic system for the regulation of the condensing pressure (flooding valves).

The pumps and the expansion tank are not included in Johnson Control’s supply. Units in “free cooling” version cannot install the optional hot water heating coil, only the electric one, and have as standard the analogue modulating controller. The system widely uses the outdoor air–a renewable energy source–in lieu of or in addition to the mechanical cooling.

‘Two Sources’ option utilising excess energy from building HVAC systems

This system consists of the same chilled-water cooling coil as the “Free cooling”, but fed by the building water chiller. A built in frigorific circuit enters in operation in case of lack of chilled water. The result is the maximum security or a remarkable reduction of both consumption and running costs. This system can also use the direct-expansion coil circuit as primary cooling source and, in case of an emergency, the chilled-water coil connected with the tap water network.

The “Two Sources” version is available for units with direct expansion circuit **YC-OPA..../TS, YC-UPA..../TS** as well as units with built in water cooled condenser (accessory) and with double chilled water coil **YC-OPU.../TS, YC-UPU.../TS**: one for district water and the other for tap water or water from a chiller (emergency).

Units in “Two Sources” cannot install the optional hot water heating coil, only the electric one, and have as standard the analogue modulating controller.

50 kW upflow 2 circuits direct expansion air conditioner

Fittings and accessories

Numerous accessories and options are available for the **"P" Series** air conditioners to personalise the installation depending on the requirements of the plant and its design. Divided by function, they include:

Free cooling or two sources

- Additional Free cooling circuit.
- Additional Two sources circuit.

Alarms

- Water alarm (supplied loose).
- Out-of-range air discharge temperature alarm.
- Smoke/fire alarm terminals.

Water cooled condensers and pressostatic valves

- Welded stainless steel water cooled plate condenser.
- 2 way pressostatic valve (only if the water condenser is selected).

Sound proofing devices

- Sound damped duct for air suction or discharge (h=550 mm). Allows a reduction of approx 4 dB(A) of the SPL of the unit.
- Double layer sound damping panels. Reduces SPL by approx 2 dB(A) in upflow units (OP series), and approx.4 dB(A) in downflow units ((UP series).
- Double-layer "sandwich" thermo-acoustic insulation panels.

Panels and base

- Blind front panel (OP) and open base for bottom air intake.
- Front panel with grille in the lower part (UP) and closed base.

Plenum

- Plenum (h=550 mm) for air discharge or intake with front grille.
- Plenum (h=550 mm) for air discharge or intake with front and side grilles.

Direct expansion unit cooling capacity regulation

- Electronic expansion valve.
- Electronic hot-gas injection system for the regulation of cooling capacity (100-10%).

Heating, reheating and humidification

- Single-step or double-step low thermal inertia electrical heating/ reheating coil.
- Immersed-electrode modulating humidifier and dehumidification control.
- Humidity sensor for the single control of dehumidification.

Boards and sensors

- Humidity sensor and board for external humidification control not supplied by Johnson Controls.
- RS 485 communication board.

Dampers

- Gravity-operated overpressure dampers on the air outlet (OP series).
- Motorised overpressure dampers on the air intake (UP series).

Under bases

- Adjustable under base (OP only). *(Precise height to be specified with order).*
- Adjustable under base with air deflector (UP only). *(Precise height to be specified with order).*

Fans and filters

- Electronic EC fans with incorporated inverter for constant rotation speed regulation.
- Electronic EC fans with incorporated inverter for the regulation of air flow in relation to the required cooling capacity.
- Electronic EC fans with incorporated inverter for the regulation of constant pressure in the raised floor.
- Electronic two-speed AC fans.
- F7 filter to be installed on the air intake as substitute for the standard G4.
- Monophase condenser-fan rotation speed variator

Performance at JOHNSON CONTROLS test conditions*

Technical Characteristics

YC-OPA: direct expansion air conditioners with air cooled or water condensers and up-flow air supply																		
Models		**71**	**111**	**141**	**211**	**251**	**301**	**302**	**361**	**372**	**422**	**461**	**491**	**512**	**612**	**662**	**852**	**932**
Performances																		
Total cooling capacity	kW	7.7	11.1	14.5	20.8	25.3	31.2	30.6	36.6	38.8	42.7	46.9	52.3	51.6	63.2	67.7	87.3	94.2
Sensible cooling capacity	kW	7.4	11.1	12.8	20.8	22.7	30.3	30.1	36.6	33.6	42.7	45.3	52.3	47.4	62.6	64.5	73.2	85.4
Airflow	m^3/h	2 200	3 200	3 200	7 000	7 000	8 700	8 700	14 500	8 700	14 500	14 500	17 900	14 500	17 900	17 900	17 900	20 700
EER		3.69	3.26	3.36	3.12	3.06	3.13	3.20	3.24	3.03	3.22	3.37	3.47	3.14	3.21	3.17	3.29	3.59
Sound pressure level	dB(A)	51	57	57	62	62	60	60	65	65	65	65	62	65	62	62	62	60
Dimensions & weight																		
Lenght	mm	750	750	750	860	860	1 410	1 410	1 750	1 410	1 750	1 750	2 300	1 750	2 300	2 300	2 300	2 640
Depth	mm	601	601	601	880	880	880	880	880	880	880	880	880	880	880	880	880	880
Height	mm	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990
Net weight	kg	180	200	210	270	270	320	340	440	350	450	450	540	500	640	640	660	860
Free Cooling		○	○	○	○	○	●	●	○	●	○	○	●	○	●	●	●	○
Two Sources		○	○	○	○	○	●	●	○	●	○	○	●	○	●	●	●	○

** Performance refers to: R410a refrigerant; condensing temperature 45°C; incoming air 24°C-45%Rh; water 7/12°C; external static pressure 30 Pa. The declared performance does not take into account the heat generated by fans, which must be added to the system thermal load.*
EER (Energy Efficiency Ratio) = total cooling capacity / compressors power consumption + fans power consumption (air cooled condensers excluded).
Sound levels at a 2 m distance, in a free field, as per UNI EN ISO 3744:2010.

Technical Characteristics

YC-UPA: direct expansion air conditioners with air cooled or water condensers and down-flow air supply																		
Models		**71**	**111**	**141**	**211**	**251**	**301**	**302**	**361**	**372**	**422**	**461**	**491**	**512**	**612**	**662**	**852**	**932**
Performances																		
Total cooling capacity	kW	7.7	11.1	14.5	20.8	25.3	31.2	30.6	36.6	38.8	42.7	46.9	52.3	51.6	63.2	67.7	87.3	94.2
Sensible cooling capacity	kW	7.4	11.1	12.8	20.8	22.7	30.3	30.1	36.6	33.6	42.7	45.3	52.3	47.4	62.6	64.5	73.2	85.4
Airflow	m^3/h	2 200	3 200	3 200	7 000	7 000	8 700	8 700	14 500	8 700	14 500	14 500	17 900	14 500	17 900	17 900	17 900	20 700
EER		3.69	3.25	3.36	3.12	3.06	3.13	3.20	3.24	3.03	3.22	3.37	3.47	3.14	3.21	3.17	3.29	3.59
Sound pressure level	dB(A)	51	57	57	62	62	60	60	65	60	65	65	62	65	62	62	62	60
Dimensions & weight																		
Lenght	mm	750	750	750	860	860	1 410	1 410	1 750	1 410	1 750	1 750	2 300	1 750	2 300	2 300	2 300	2 640
Depth	mm	601	601	601	880	880	880	880	880	880	880	880	880	880	880	880	880	880
Height	mm	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990
Net weight	kg	180	200	210	270	270	320	340	440	350	450	450	540	500	640	640	660	860
Free Cooling		○	○	○	○	○	●	●	○	●	○	○	●	○	●	●	●	○
Two Sources		○	○	○	○	○	●	●	○	●	○	○	●	○	●	●	●	○

** Performance refers to: R410a refrigerant; condensing temperature 45°C; incoming air 24°C-45%Rh; water 7/12°C; external static pressure 30 Pa. The declared performance does not take into account the heat generated by fans, which must be added to the system thermal load.*
EER (Energy Efficiency Ratio) = total cooling capacity / compressors power consumption + fans power consumption (air cooled condensers excluded).
Sound levels at a 2 m distance, in a free field, as per UNI EN ISO 3744:2010.

Performance at JOHNSON CONTROLS test conditions*

Technical Characteristics

YC-OPU: with chilled water coil and up-flow air supply									
Models		**10a**	**20a**	**30**	**50**	**80**	**110**	**160**	**220**
Performances									
Total cooling capacity	kW	10.0	18.0	32.4	43.6	66.8	80.2	121.9	160.3
Sensible cooling capacity	kW	9.2	15.4	29.8	38.1	62.1	72.0	109.7	144.0
Airflow	m^3/h	2 200	3 200	7 400	8 200	15 400	17 000	26 000	34 000
EER		34.42	29.24	22.83	21.48	23.94	24.30	23.62	24.29
Sound pressure level	dB(A)	51	57	63	59	66	61	63	64
Dimensions & weight									
Lenght	mm	750	750	860	860	1 750	1 750	2 640	3 495
Depth	mm	601	601	880	880	880	880	880	880
Height	mm	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990
Net weight	kg	155	160	220	240	340	360	540	700
Free Cooling		○	○	○	●	○	●	●	○
Two Sources		○	○	○	●	○	●	●	○

** Performance refers to: R410a refrigerant; condensing temperature 45°C; incoming air 24°C-45%Rh; water 7/12°C; external static pressure 30 Pa. The declared performance does not take into account the heat generated by fans, which must be added to the system thermal load.*
EER (Energy Efficiency Ratio) = total cooling capacity / compressors power consumption + fans power consumption (air cooled condensers excluded).
Sound levels at a 2 m distance, in a free field, as per UNI EN ISO 3744:2010.

Technical Characteristics

YC-UPU: with chilled water coil and down-flow air supply									
Models		**10**	**20**	**30**	**50**	**80**	**110**	**160**	**220**
Performances									
Total cooling capacity	kW	10.2	18.0	32.4	43.6	66.8	80.2	121.9	160.3
Sensible cooling capacity	kW	9.2	15.4	29.8	38.1	62.1	72.0	109.7	144.0
Airflow	m^3/h	2 200	3 200	7 400	8 200	15 400	17 000	26 000	34 000
EER		34.42	28.98	22.82	21.48	23.95	24.29	23.62	24.29
Sound pressure level	dB(A)	51	57	63	59	66	61	63	64
Dimensions & weight									
Lenght	mm	750	750	860	860	1 750	1 750	2 640	3 495
Depth	mm	601	601	880	880	880	880	880	880
Height	mm	1 990	1 990	1 990	1 990	1 990	1 990	1 990	1 990
Net weight	kg	155	160	220	240	340	360	540	700
Free Cooling		○	○	○	●	○	●	●	○
Two Sources		○	○	○	●	○	●	●	○

** Performance refers to: R410a refrigerant; condensing temperature 45°C; incoming air 24°C-45%Rh; water 7/12°C; external static pressure 30 Pa. The declared performance does not take into account the heat generated by fans, which must be added to the system thermal load.*
EER (Energy Efficiency Ratio) = total cooling capacity / compressors power consumption + fans power consumption (air cooled condensers excluded).
Sound levels at a 2 m distance, in a free field, as per UNI EN ISO 3744:2010.

YORK® YC-G Series
Close Control Air Conditioners

A complete range from 43 kW up to 183.5 kW

Applications

"G" Series YORK air conditioners consist of a family of units specially designed to exploit the plant characteristics of the latest generation of large Data Centres.

In the design of air conditioning equipment for large Data Centres, the necessities of cable housing and for the distribution of the enormous quantities of air required to cool the servers have made it necessary to raise the height of the false floor to now reach the current 600-800 millimetres. This creates an ample space below the air conditioner destined to the installation of the plinth. This large space under the raised floor was therefore considered as the housing for the discharge fans. The air conditioners are supplied in two separate sections: the under-base containing the discharge fans to be installed under the floating floor, and the treatment unit with the exchanger coil, filters and the electrical panel.

This large space under the raised floor is used to house the supply air fans. The air conditioners are therefore supplied in two separate sections:

- The treatment unit with enlarged heat exchanger coil, filters and electrical panel.
- The plinth containing the supply air fans, to be installed under the raised floor. The plinth with the fans is supplied to match the height indicated in the order from the customer.

The two sections, shipped separately, are easy to install on-site as they require only electrical connection of the two junction boxes in the air conditioner and the plinth.

Downflow supply

Standard version for perimetral installation inside the Data Centre: the height of the raised floor must be minimum 550 mm.

Version for perimetral installation inside the Data Centre with raised floor height less than 550 mm. In this case, the plinth with fixed height of 550 mm is supplied with lateral closure panels and must be installed above the floor. It is essential to check that the height of the ceiling is sufficient to ensure good air suction.

Version for installation outside the Data Centre, without raised floor, rear air supply. In this case the plinth (fixed height 550 mm) is supplied with side closure panels and rear supply air grilles. Installation of the plenum with rear re-intake system is optional, if there is no ductwork.

Technical Characteristics

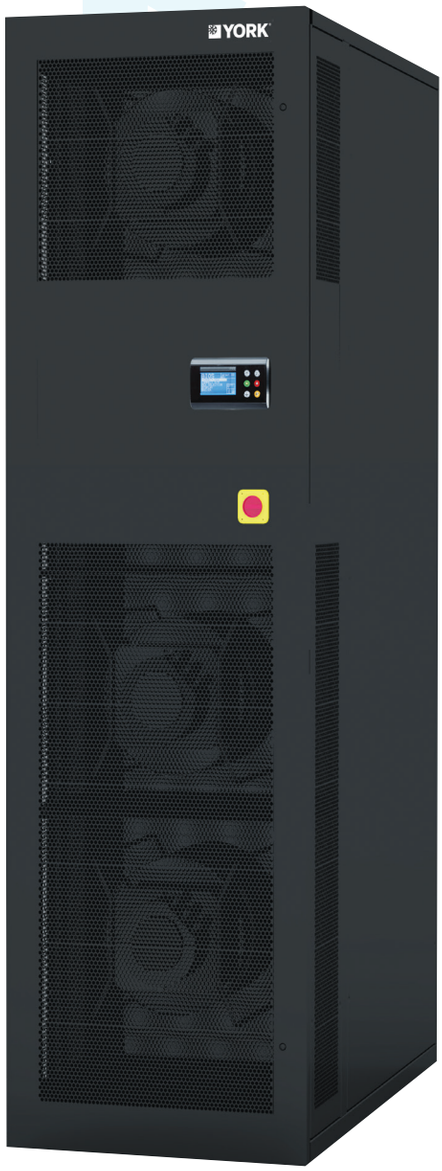
YC-UGA: direct expansion air conditioners with air-cooled or water-cooled condensers and downflow air supply				
Models		**461**	**612**	**932**
Total cooling capacity (1)	kW	43.0	54.9	91.7
Sensible cooling capacity (1)	kW	35.9	42.1	79.4
EER (3)		3.39	2.86	3.60
Total cooling capacity (2)	kW	46.6	58.8	99.6
Sensible cooling capacity (2)	kW	46.6	53.1	99.6
EER (3)		3.67	3.07	3.92
Airflow	m^3/h	9 500	10 000	19 000
Sound pressure level (4)	dB(A)	57	58	59
Lenght	mm	1 490	1 490	2 390
Depth	mm	921	921	921
Height	mm	1 990	1 990	1 990
Net weight	kg	630	680	870

YC-UGU: chilled water coil air conditioners with downflow air supply					
Models		**70**	**150**	**230**	**300**
Total cooling capacity (1)	kW	47.7	91.7	128.3	183.5
Sensible cooling capacity (1)	kW	42.1	82.6	119.9	165.3
EER (3)		32.89	33.97	35.15	40.77
Total cooling capacity (2)	kW	38.5	74.9	106.7	149.8
Sensible cooling capacity (2)	kW	38.5	74.9	106.7	149.8
EER (3)		27.7	28.69	29.81	34.51
Airflow	m^3/h	9 500	19 000	28 500	38 000
Sound pressure level (4)	dB(A)	57	59	61	60
Lenght	mm	1 320	2 220	3 120	4 020
Depth	mm	921	921	921	921
Height	mm	1 990	1 990	1 990	1 990
Net weight	kg	610	750	930	1 250

(1) Performance refers to: R410a refrigerant; condensing temperature 45°C; incoming air 24°C-45%Rh; water 7/12°C; external static pressure 30 Pa, ventilated plenum, height 1000 mm. The declared performance does not take into account the heat generated by fans, which must be added to the system thermal load.
(2) Performance refers to: R410a refrigerant; condensing temperature 45°C; incoming air 30°C-30%Rh; water 14/20°C; external static pressure 30 Pa, ventilated plenum, height 1000 mm. The declared performance does not take into account the heat generated by fans, which must be added to the system thermal load.
(3) EER (Energy Efficiency Ratio) = total cooling capacity / compressors power consumption + fans power consumption (air cooled condensers excluded).
(4) Sound levels at a 2 m distance, in a free field, as per UNI EN ISO 3744:2010.

YORK® YC-R Series
Close Control Air Conditioners

A complete range from 20.6 kW up to 36.2 kW



Applications

"R" Series YORK air conditioners consist of a family of units specially designed and constructed to have the same dimensions as the racks.

In the design of air conditioning plant for large Data Centres, the reduction of energy consumption is of ever increasing importance. For this reason the following concepts have become consolidated international standard practice:

- The racks containing the servers are more often positioned according to the "hot corridor aisle" and "cold corridor/aisle" layout.
- The working air temperatures are now allowed to go up to 30-35°C in the hot corridor and 20-25°C in the cold one, with very low humidity (never above 30%). Consequently, also the water temperature is allowed to rise up to 20-28°C, using the Free Cooling system to the best effect.
- Server capacities keep going up while their dimensions keep going down. This means that more servers can be installed in a rack so that some of these racks, remaining empty, can be removed. At the same time the heat dissipated rises and more capacity is required from the air conditioners.
- The servers work day and night albeit with a night time reduction of their capacity. It is therefore essential for the air conditioning installation to have an efficient modulating cooling capacity control and to be designed for minimum energy consumption and minimum environmental impact.

Horizontal supply

Version for in-row installation with front and lateral air supply.

Technical Characteristics

YC-HRA: direct expansion air conditioners with air-cooled or water-cooled condensers and horizontal air supply			
Models		**231**	**361**
Total cooling capacity (1)	kW	20.6	36.2
Sensible cooling capacity (1)	kW	20.6	35.6
EER (2)		3.31	3.65
Airflow	m^3/h	6 500	7 500
Sound pressure level (3)	dB(A)	52	54
Lenght	mm	600	600
Depth	mm	1 180	1 180
Height	mm	2 000	2 000
Net weight	kg	215	215
Free Cooling		●	○
Two Sources		●	○

YC-HRU: chilled water coil air conditioners with horizontal air supply		
Models		**40**
Total cooling capacity (1)	kW	31.6
Sensible cooling capacity (1)	kW	31.6
EER (3)		26.58
Airflow	m^3/h	9 000
Sound pressure level	dB(A)	61
Lenght	mm	600
Depth	mm	1 180
Height	mm	2 000
Net weight	kg	190
Free Cooling		●
Two Sources		●

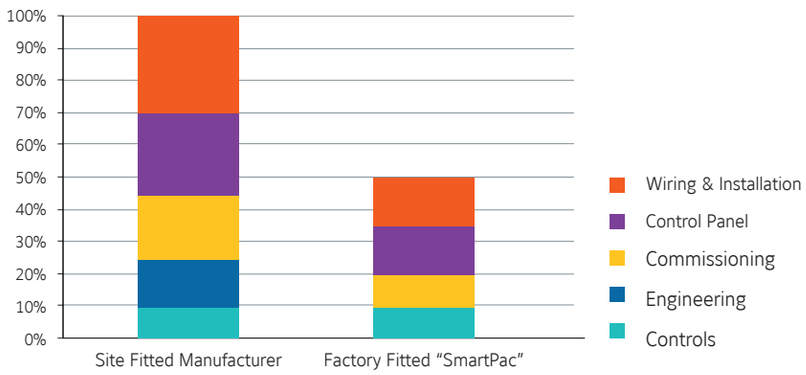
(1) Performance refers to: R410a refrigerant; condensing temperature 45°C; incoming air 30°C-30%Rh; water 14/20°C; external static pressure 30 Pa. The declared performance does not take into account the heat generated by fans, which must be added to the system thermal load.
(2) EER (Energy Efficiency Ratio) = total cooling capacity / compressors power consumption + fans power consumption (air cooled condensers excluded).
(3) Sound levels at a 2 m distance, in a free field, as per UNI EN ISO 3744:2010.

SmartPac

SmartPac from Johnson Controls offers factory packaged control solutions that reduce cost, enhance quality and optimise site time.

Once on site, the equipment can be started immediately. Commissioning time is dramatically reduced, allowing to better control the project costs through simplifying equipment installation and commissioning.

Quality is ensured through application and testing to European Installation regulations at the factory. Pre-installed software is configured to deliver air at the specified volume, temperature and humidity.



SmartPac and YORK® Air Handling units

The Air Handling Unit arrives on site **ready to connect** to the site network, and final commissioning is simplified through the unit's keypad and display.

Panel Power wiring, controls wiring, Variable Speed Drive, pre-engineered controller and required peripheral devices are all supplied, factory fitted and tested.

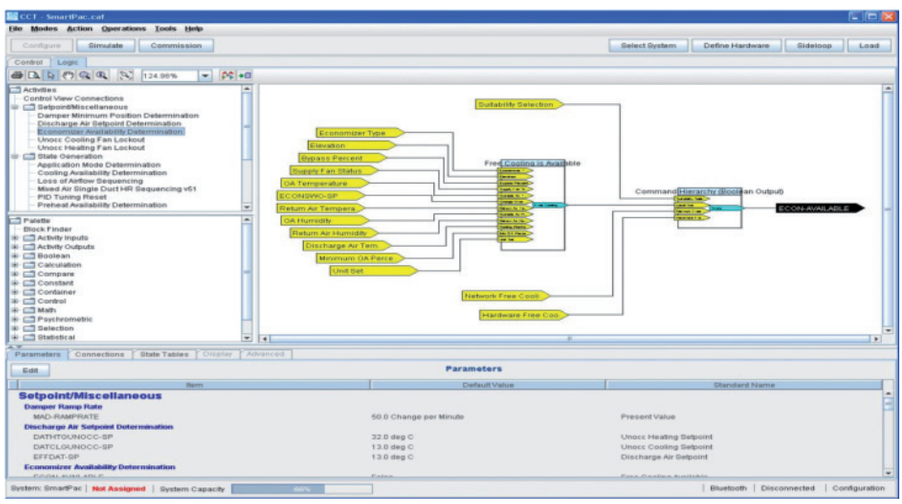
SmartPac and YORK® Fan Coil units

YORK® Fan Coil Units are available with factory packaged controls and numerous options for controllers and valves **to allow reduced installation time on site.**

A range of standard configurable or fully programmable controllers are offered along with a choice of Industry standard protocols. Valve requirements can also be met with a wide range of modulating and on/off actuators and isolation valves available and factory fitted.

SmartPac and YORK® Roof Top & Close Control units

Factory packaged controls' solution enable, to **dramatically reduce on-site commissioning costs.** Both are delivered to site with pre-installed controls, factory tested and ready to apply the power.



SmartPac and YORK® Standard Control panel

Furthermore, Variable Speed Drives give **extra efficiency communicating** with the Johnson controller using industry standard protocols and providing for seamless communications with exisiting BAS control systems.

CE Manufacturer reserves the rights to change specifications without prior notice.

Johnson Controls eCatalogue

Johnson Controls eCatalogue, also known as the “Virtual Branch”, is not only an extensive database of product information but also a point of entry into our organization.

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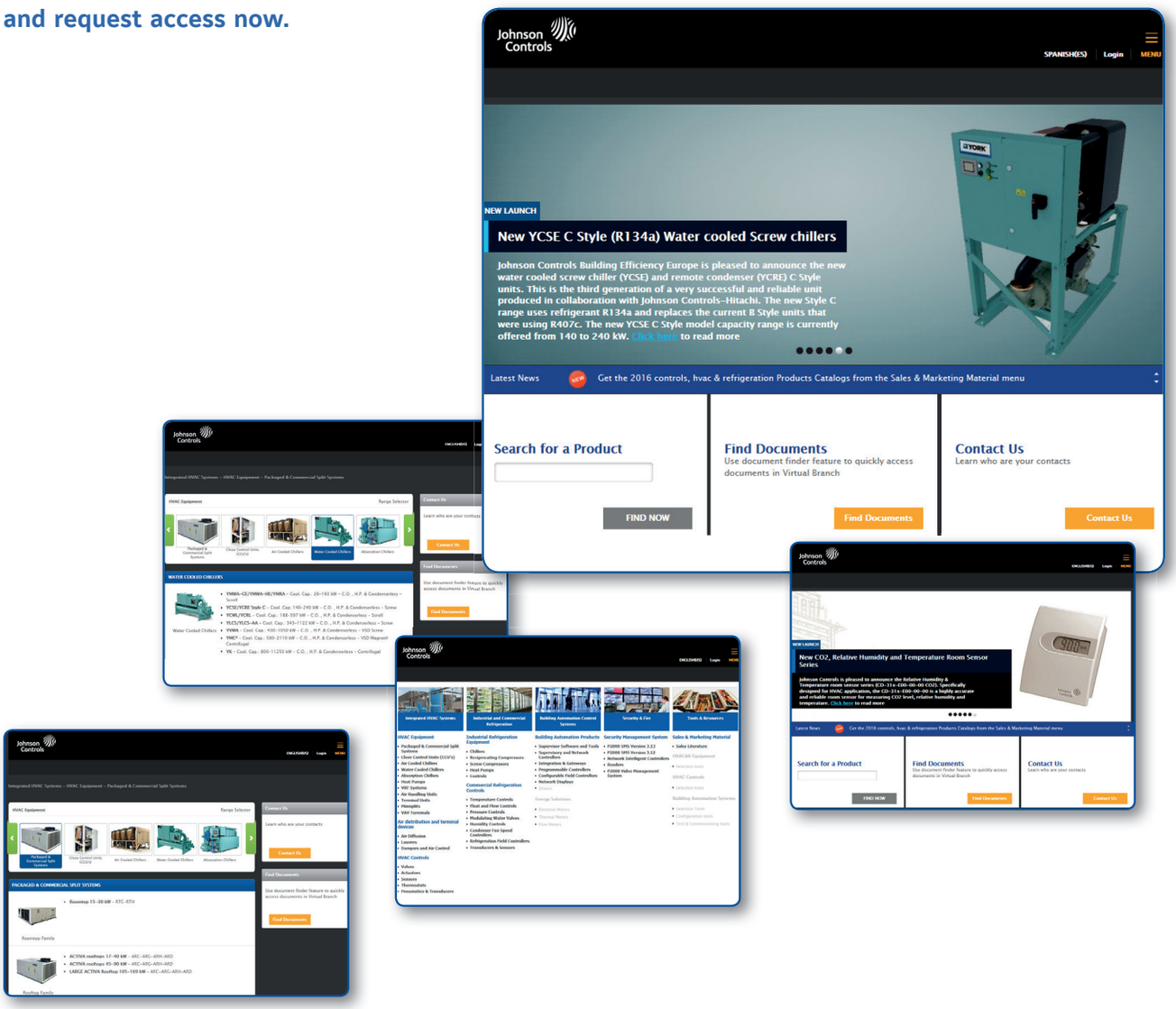
Call your Sales Representative and request access now.



Johnson Controls

YORK®

Genuine Parts

Maintain your YORK equipment with YORK Genuine Parts

Building Efficiency

Johnson Controls delivers products, services and solutions that increase energy efficiency and lower operating costs in buildings for more than one million customers.

Operating from 500 branch offices in more than 150 countries, the company is a leading provider of equipment, controls and services for heating, ventilating, air-conditioning, refrigeration and security systems. Johnson Controls is involved in more than 500 renewable energy projects including solar, wind and geothermal technologies.

Its solutions have reduced carbon dioxide emissions by 16 million metric tons and generated savings of $7.5 billion since 2000. Many of the world's largest companies rely on Johnson Controls to manage 1.5 billion square feet of their commercial real estate.

YORK®

INSTALL CONFIDENCE.

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